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**“IC and welfare in the fifth stage of Intellectual Capital
Insights from the topic of sustainability”**

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ABSTRACT

The thesis merges the topic of Intellectual Capital (IC) with some themes of welfare, more in details sustainability and its sub-theme female entrepreneurship.

The so-called “Fifth Stage of Intellectual Capital” is a recent research trend that sees the concept of “value” go beyond the boundaries of the firm to pursue “the greater good” for the stakeholders and the community. In this perspective, Financial, Environmental, and Social Sustainability and welfare are the key topics.

The purpose of the first research (papers 1 and 2) is to investigate the relationship between IC and sustainability using practitioners’ perspectives and by developing an analysis of comments and practices published in 1,651 blog posts in one of the leading sources of sustainability research: CSRwire.com. A total of 1,651 posts, containing more than 1.5 million words, published by experts in the field of sustainability are analyzed using Leximancer and content analysis. The results reveal IC and sustainability to be complex topics under active discussion by practitioners, and several links to the IC literature are identified and compared. The findings focus on the managerial practices applied by leading companies, as discussed by practitioners, that show IC and sustainability influence each other in answering a plurality of demands or logics (paper 1). Besides, practitioners address 17 main themes split into Financial (also known as Economic), Social and Environmental Sustainability. The three main components of IC: Human Capital, Relational Capital, and Structural Capital connect with most of these themes proving that IC and sustainability influence each other.

As an implication, the research identifies the need to study the managerial practices proposed by practitioners, rather than their company reports. Second, the research recommends developing a trading zone for IC researchers and practitioners. Third, it reflects on the role of new communication tools, such as integrated reporting, to connect IC and sustainability. Finally, the research concludes that the relationship between IC and sustainability could benefit from the fifth stage of IC research that considers the justifications of the worth of IC and sustainability practices. The study is novel because it addresses concerns about the relationship between IC and sustainability by examining messages posted by practitioners, rather than examining company disclosures. This leads to an understanding of the impact of practices rather than the desires motivating practice. The results support the view that it is time to remove the boundaries of IC research and work towards reconciling the worth of IC to different people in different contexts. The study argues that practitioners require scholars to reduce the ambiguity between IC and its expected results. This would open the door to

a potentially productive way of understanding IC and the complexity of economic, social, and environmental value. In short, researchers should change their research questions from, "What is IC worth to investors, customers, society, and the environment?" to "Is managing IC a worthwhile endeavor?"

The second research (paper 3) concentrates on one topic, the one of female entrepreneurship as a social sustainability issue. For several decades now, support for women's entrepreneurship has been present on the political agenda internationally. The arguments vary, ranging from economic growth and new jobs to human resource utilization to justice and equality. Gender equality is a right recognized and promoted by the United Nations. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) adopted by world leaders in 2015 embody a roadmap for progress that is sustainable and leaves no one behind. Achieving gender equality and women's empowerment is integral to each of the 17 goals, ensuring the rights of women to get justice and inclusion, economies that work for all, and sustaining shared environment now and for future generations [Un Woman]. Entrepreneurship is seen as a vital asset for the economic growth, and public entities should foster it by dedicating specific mentoring programs and funding. Women entrepreneurship is seen as a relevant asset too, in fact, female entrepreneurs are more devoted to the welfare, equity, and care more about sustainable development. The study employs a mixed method approach by collecting data from a Regional program to enhance entrepreneurship which took place in Friuli Venezia Giulia, Italy, during the years 2011-2012. The idea is to investigate the differences between men and women in terms of experience and complexity of the initiative and to understand the issues that prevent women to open their own business. Using a single case study approach, we then investigated the role of relational capital, which is seen as a vital element of the contemporary economy, as well as a critical asset for female startups. The purpose of the study is to contribute to the debate regarding the issues affecting the opening of new companies as well as the link between relational capital and female enterprises.



Paper 1

Practitioners' views on intellectual capital and sustainability

From a performance-based to a worth-based perspective

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Abstract

Purpose – The purpose of this paper is to investigate the relationship between intellectual capital (IC) and sustainability using practitioners' perspectives and by developing an analysis of comments and practices published in 1,651 blog posts in one of the leading sources of sustainability research: CSRwire.com.

Design/methodology/approach – A total of 1,651 posts, containing more than 1.5 million words, published by experts in the field of sustainability are analysed using Leximancer and content analysis.

Findings – The results reveal IC and sustainability to be complex topics under active discussion by practitioners, and several links to the IC literature are identified and compared. The findings focus on the managerial practices applied by leading companies, as discussed by practitioners, that show IC and sustainability influence each other in answering a plurality of demands or logics.

Research limitations/implications – First, the authors identify the need to study the managerial practices proposed by practitioners, rather than their company reports. Second, the authors propose developing a trading zone for IC researchers and practitioners. Third, the authors reflect on the role of new communication tools, such as integrated reporting, to connect IC and sustainability. Finally, the authors conclude that the relationship between IC and sustainability could benefit from a fifth stage of IC research that considers justifications of the worth of IC and sustainability practices.

Originality/value – The paper is novel because it addresses concerns about the relationship between IC and sustainability by examining messages posted by practitioners, rather than examining company disclosures. This leads to an

understanding of the impact of practices rather than the desires motivating practice.

The results support the view that it is time to remove the boundaries of IC research and work towards reconciling the worth of IC to different people in different contexts. The authors argue that practitioners require scholars to reduce the ambiguity between IC and its expected results. This would open the door to a potentially productive way of understanding IC and the complexity of economic, social, and environmental value. In short, researchers should change their research questions from, "What is IC worth to investors, customers, society, and the environment?" to "Is managing IC a worthwhile endeavour?"

Keywords Performance, Sustainable development, Practitioners, Intellectual capital, Worth, Fifth-stage intellectual capital

Paper type Research paper

1. Introduction

Intellectual capital (IC) is evolving and growing in both the number of papers published and the number of scholars researching it (Guthrie et al., 2012). A keyword search of the word "intellectual capital" using the Scopus [1] database for the period 1995-2015 reveals a growing trend in IC research, with the total number of papers published per year increasing by 26 per cent over the last three years. While interest in IC is growing, critical IC research is also emerging that calls for a deeper understanding of how IC works (Dumay and Garanina, 2013, p. 11). These calls advocate a broader approach to creating value that includes social and environmental values (Dumay et al., 2017). This paper provides new insights and critiques by investigating the relationship between IC and sustainability in practice.

To analyse IC and sustainability practices, we performed a content analysis of 1,651 blog posts containing over 1.5 million words posted on a leading sustainability blog: CSRwire.com (Griffin and Sun, 2013, p. 94). Our analysis identifies the sustainability practices used by leading companies and reveals that IC and sustainability are complex topics. When compared to the academic literature, we find evidence of some practice understandings common to both real life and academic theory; however, we also find evidence of a divide between the espoused academic and practical perspectives of the relationship between IC and sustainability. The practices that depart from academic theory are identified, as they provide opportunities for further theoretical investigation.

The paper is novel because it identifies a gap between IC and sustainability practice and theory. By focussing on the messages posted by practitioners and the theories posed by academics, we critically analyse how IC is developing in the wider ecosystem of its fourth stage of research to create a new understanding of the relationship between IC and sustainability practice. In our critique, we

identify three implications. First, we identify a need to study the managerial practices proposed by practitioners, rather than company reports that express their desires. Second, we propose developing a trading zone for IC researchers and practitioners. Third, we reflect on the role of new communication tools, such as integrated reporting, as a way of connecting IC and sustainability. Finally, we conclude that the relationship between IC and sustainability could benefit from a fifth stage of IC research in which justifications for the worth of IC and sustainability practices are considered.

In the remainder of this the paper, Section 2 outlines the literature review and draws out the research questions. Section 3 describes the methodology used. Our findings are presented in Section 4. Section 5 presents a critique, and the concluding section outlines the need to consider different views on the worth of IC and sustainability practices, along with a discussion on how our findings support a proposed fifth stage of IC research.

2. Literature review

IC research has evolved over recent years, progressively changing its focus (Chiucchi and Dumay, 2015) as it moves through different stages (Guthrie et al., 2012). In the first stage of research, between the 1980s and 1990s, a commonly accepted set of IC terminology was developed. IC research concentrated on creating a common understanding of the potential of IC for making and managing a company's competitive advantage (Guthrie et al., 2012).

The second stage of research arose in the new millennium when the problems of measuring, managing, and reporting IC were approached (Dumay and Garanina, 2013). These efforts were oriented towards gathering empirical evidence to deepen the potential role of IC in the value creation process (Guthrie et al., 2012). In short, the first two stages of research generally focused on understanding the concept of IC and its implications for the value creation process. The third stage saw the development of studies that critically examine IC in practice; most focused on managerial implications (Dumay and Garanina, 2013). According to Dumay and Garanina (2013), this stage expanded the construct of value by incorporating other dimensions, such as the worth and importance of products and services to customers. The fourth stage of IC research emerged with the aim of extending IC's boundaries into a wider ecosystem (Secundo et al., 2016), including nations (Käpylä et al., 2012), cities (Dameri and Ricciardi, 2015), and communities (Bounfour and Edvinsson, 2005).

Therefore, while studies that critically examine IC in practice characterised the third stage of research, the fourth stage is extending the concept of value within and beyond the boundaries of the company.

While the fourth stage of IC research is relatively recent, the topic of sustainability has been growing since 1972 when the United Nations Conference on the Human

Environment coined the term sustainable development (Hall et al., 2010). Sustainability gained prominence in 1987 due to the diffusion of a report published by the UN World Commission on Environment and Development, known as the Brundtland Report (Brundtland Commission, 1987). The key outcome of the Brundtland Report is that present generations cannot grow while compromising the ability of future generations to meet their needs (Brundtland Commission, 1987). Under this umbrella, there are “no right or wrong definitions” of sustainability (Isaksson and Steimle, 2009, p. 180), but an accepted definition identifies its three main pillars: economic, social, and environmental sustainability (Wasiluk, 2013, p. 103). Therefore, in the fourth stage of research, scholars are analysing the interrelations between the three pillars of economic, social, and environmental sustainability within IC.

The fourth stage of IC research shows a growing awareness that IC is crucial to not only creating economic value, “but also, and even more importantly, to address[ing] the paramount ecological, social, and demographic problems that our societies are facing” (Dameri and Ricciardi, 2015, p. 861). Additionally, in the last decade, changing laws and stakeholder reactions to different environmental and social scandals (Foote et al., 2010) have forced companies to internalise environmental and social concerns (Wasiluk, 2013).

According to Wasiluk (2013, p. 104), there is an overlap between sustainability and IC because “both highlight how organisations need to develop new understandings of how to create and exploit their nonfinancial resources”. Focussing on company communications, several studies find that environmental, social, and IC reports overlap (Cinquini et al., 2012; Cordazzo, 2005, 2012), and, as such, the need to develop an extended performance reporting framework has been discussed (Demartini and Paoloni, 2013). It is clear that sustainability is emerging as an important topic that is strongly related to the fourth stage of IC research with implications for both management and the sustainability disclosures that are used to analyse IC. As a result, IC researchers are exploring the relationships between IC, sustainability, and the competitiveness of companies, cities, regions, and countries from which an emerging body of literature is developing. Table I outlines several prominent examples and their key findings.

Table I shows that the connection between IC and economic sustainability was first outlined by Pedrini (2007) who states, “corporate responsibility practices oriented toward improving intangible resources result in better financial performance”. Similar findings supporting the connection between the two demonstrate that sustainability actions can increase a corporation’s e-reputation (Dutot et al., 2016), improve a company’s image (Pedrini, 2007), and support technological innovation focussed on sustainability (Chang and Chen, 2012). According to Wasiluk (2013), IC plays a primary role in operationalizing

sustainability, motivating people, supporting customer relationships, and increasing performance. Previous studies focussing on the connection between IC and economic sustainability find that both dimensions interact to support each other's development (Chang and Chen, 2012; Dutot et al., 2016; Pedrini, 2007; Wasiluk, 2013). Additionally, according to Bounfour and Edvinsson (2005), IC is important for supporting nations and the development of social cooperation programmes. Dumay and Garanina (2013, p. 21) claim, there is a need to switch IC research "from a managerial to an ecosystem focus". One of the central pillars of an ecosystem approach focusses on creating a bridge between the knowledge inside an organisation and the knowledge outside (Cinquini, 2012). Research shows that IC consolidates knowledge that is useful for triggering innovative processes to solve social issues, such as integrating people and institutions, improving access to public services, or building smarter cities (Dameri and Ricciardi, 2015).

Table I.
Previous studies on IC and sustainability ..

Sustainability	Authors	Focus	Main findings
Economic	Pedrini (2007)	Human capital in sustainability reports	Interaction of IC and sustainability to improve image, increase customer reputation, and develop market trust
	Chang and Chen (2012)	Green IC	IC to support sustainable innovation and reinforce competitive advantage
	Wasiluk (2013)	Sustainable development	IC to support efficiency, business model evolution, and to motivate and support people
	Dutot et al. (2016)	E-reputation	Sustainability disclosure strategy to increase e-reputation, change customer perception through
Social	Bounfour and Edvinsson (2005)	IC and economic development of nations	IC to support nations and social development
	Dameri and Ricciardi (2015)	IC and territorial systems innovation management	IC to increase social services and integrate people and institutions
	Cinquini (2012)	Voluntary disclosure to spread sustainable and IC information	Voluntary disclosure to spread information about IC and sustainability inside and outside the organisation
Environmental	López-Gamero et al. (2011)	Sustainable development and intangibles	IC to improve environmental technology use, involve external stakeholders to support and extended environmental management process
	De Marchi and Grandinetti (2013)	Knowledge strategies for environmental innovation	IC and knowledge management to promote eco-friendly innovations
	Jamali (2006)	Organisational learning and sustainability	IC to support organisational learning, motivate workforce, and other stakeholders on environmental problems, such as resource consumption
	Claver-Cortés et al. (2007)	IC and environmental capital	IC can be used to spread company's efforts to protect and preserve the environment

Environmental consciousness also has positive effects on IC (Chang and Chen, 2012). As López-Gamero et al. (2011, p. 18) state, "Sustainable intellectual capital is a promising starting point for the incorporation of environmental aspects into the general management system of a firm". By fostering environmental consciousness, firms might develop deeper relationships with clients that move beyond mere eco-labelling. For example, creating collaborations between producers and retailers to promote eco-friendly innovations for the end consumer (De Marchi and Grandinetti, 2013). Additionally, IC can support the development of a "will to question" the way of doing business and a more friendly environmental approach (Jamali, 2006). Considering the connection between environmental sustainability and IC, Claver-Cortés et al. (2007) claim that firms who use their IC to support the development of environmentally friendly products have a higher added value component.

While the literature on IC and sustainability is growing, there is arguably a need to study these topics more critically (Dumay and Garanina, 2013). Dumay (2016, p. 171), citing a colleague, Aino Kianto, states: "I find [IC] not being practiced by managers as much as it's being preached by us academics". Additionally, empirical evidence shows that accounting firms ignore many accounting tools developed by academics that relate to sustainability (Burritt and Tingey-Holyoak, 2012). For example, according to Burritt and Tingey-Holyoak's findings (2012) from a sample of 121 accounting firms in Australia, only 8 per cent of the firms use integrated reporting tools. Similarly, other tools discussed by academics, such as carbon accounting and emissions trading, have yet to emerge as pragmatic instruments (Burritt and Tingey-Holyoak, 2012). Therefore, there is the need to understand what practices are actually being used by practitioners to link IC with sustainability. Therefore, our research question is:

RQ1. What are the current management practices linking IC and sustainability as discussed by practitioners?

3. Methodology

This section describes the research methodology we follow to answer the research questions. The first sub-section describes the research context and data acquisition. The second sub-section presents the data analysis.

3.1 Research context and data acquisition

According to Flottum et al. (2014), blogs are now a major site for the development of complex discourse and represent "an alternative site of scientific knowledge production". Blogs are therefore appropriate for answering our research question because they reflect ongoing topic discussions among practitioners working in the field. Additionally, previous studies find that

sustainability sources are useful for the study of IC (Cinquini et al., 2012; Cordazzo, 2005, 2012) Thus, our analysis focusses on one of the most important blog publishers in the field of sustainability, CSRwire.com. Posts published on CSRwire.com were chosen because this venue represents a leading source of information and events about sustainability (Griffin and Sun, 2013). CSRwire is a digital media platform, founded in 1999, with over 70,000 readers per month and nearly 60,000 news alert subscribers. CSRwire delivers news and events, press releases, and sustainability reports and provides expert commentary to a diverse global audience that reaches more than 87 million monthly views[2].

These statistics demonstrate CSRwire's wide use as a discussion platform for sustainability practices and, thus, a data source that can help answer our research question. According to the CSRwire website, bloggers include managers from corporations, NGOs, agencies, universities, and practitioners in the field of corporate citizenship, sustainability, philanthropy, and socially responsible initiatives[3]. To verify the expertise of the blog's contributors, short biographies of the contributors published by CSRwire.com were reviewed.

The results confirm the contributors to be well-known opinion leaders and practitioners in the field (see Table II). None of the top contributors discloses an academic position. A web-scraping script was used to download all the blogs posted from October 2010 (the first message available at the time of this research) to July 2016 (the last message available). A total of 1,651 blogs were downloaded, comprising 1,540,842 words and 9,889,356 characters in total. These blog posts, by well-known professionals on one of the most important blog platforms in the field of sustainability, form the corpus of this study.

Table III lists descriptive statistics of the downloaded posts.

Table II.
Top authors with more than 35 posts

Author's name	No. of posts	Short profile
Francesca Rheannon	103	Talkback Senior Editor, award-winning journalist and co-founder of Sea Change Media. She produced the Sea Change Radio's series, Back to The Future, and co-produced the Interfaith Centre of Corporate Responsibility's podcast, The Arc of Change. Francesca's work has appeared on SocialFunds.com, The CRO, and E-Magazine, and she is a contributing writer for CSRwire. Francesca hosts the nationally syndicated radio show, Writer's Voice with Francesca Rheannon
Aman Singh	68	Editorial Director of CSRwire.com. She is an experienced CSR practitioner, journalist, social media strategist and founder of Singh Solutions, which offers research and advisory services on corporate social responsibility strategy, sustainable business practices, contextual CSR reporting, employee engagement and communications. She is a New York University alum and most recently started, designed, and managed Vault.com's popular CSR channel
Elaine Cohen	43	Consultant, founder of Coethica, a consultancy focussed company on communications and strategic development including engagements with some of the world's leading companies including Microsoft, Timberland, L'Oreal, UBM, Diageo, Société General, and SAP
John Elkington	41	Executive Chairman of Volans, co-founder of Sustainability, blogs at www.johnelkington.com, tweets at @volansjohn and is a member of the Guardian Sustainable Business Advisory Panel
Hazel Henderson	39	Founder of Ethical Markets Media, a futurist, evolutionary economist, and author of the award-winning book <i>Ethical Markets: Growing the Green Economy</i> . She leads the transforming finance initiative, created the Green Transition Scoreboard®, tracking global private sector investment in green tech, and developed with Calvert Group the widely used alternative to GNP, the Calvert-Henderson Quality of Life Indicators. In 2010, she was honoured as one of the "Top 100 Thought Leaders in Trustworthy Business Behaviour 2010" by Trust Across America
Ron Schultz	36	Founder and President of Entrepreneurs4Change, working with green and social innovators, veterans, and marginalised communities providing entrepreneurial education, access to funding and capital, and ongoing nurturing and support for the businesses once they are operating
David Korten	36	He has written or co-written and had published 22 previous books, including Author of <i>Agenda for a New Economy</i> , <i>The Great Turning: From Empire to Earth Community</i> and the international best seller <i>When Corporations Rule the World</i> . He is board chair of YES! Magazine, co-chair of the New Economy Working Group and a founding member of Business Alliance for Local Living Economies (BALLE)

Table III.
Descriptive statistics

Years	Number of posts	Min. length	Max. length	Average length
2016	63	3,039	9,955	5,908
2015	191	902	14,997	5,166
2014	317	59	15,027	5,864
2013	486	42	12,652	6,350
2012	389	67	29,805	6,111
2011	204	334	10,791	5,895
2010	1	3,341	3,341	3,341

Note: Length is measured in number of characters

3.2 Data analysis

Our data analysis was conducted using a two-step process, as presented in Table IV, and discussed in detail in the next section. Similar research methodologies have been used in previous studies. For example, Isaac et al. (2011) used a two-step approach, including word counts, to investigate the performance evaluations of medical students. The first step was to import the downloaded posts into the Leximancer[4] software for concept extraction. According to Dumay (2014, p. 1261), “Leximancer allows us to analyse qualitative data, thus avoiding the subjective and labour intensive aspects of manual data coding”. Additionally, Leximancer offers an automated text mining process that determines the concepts resident in the text using internal dictionaries (Ignatow and Mihalcea, 2016) and provides a word count for each concept.

The concepts in the blogs were automatically grouped into either IC or sustainability by Leximancer using keywords, along with their corresponding word counts. Scholars usually refer to IC, according to its main three elements: human, relational, and structural capital (Albertini, 2016; Massaro et al., 2015). Therefore, the concepts referring to those elements were coded as IC (Goebel, 2015). Similarly, sustainability was coded as either social, environmental, or economic sustainability (Wasiluk, 2013). The automatic grouping process was then cross-validated by one author, and problematic findings were discussed among both lead authors to resolve any discrepancies. Table V provides the results of this analysis. The second step used content analysis (Krippendorff, 2013) to search for descriptions of managerial practices within the posts. Considering the high number of posts, we focused only on posts with high word counts pertaining to relevant IC and sustainability topics. Open in-vivo coding (Miles et al., 2013) was used to detect any best practices discussed [5]. According to Krippendorff (2013, p. 267), in content analysis, researchers “must be confident that their data [...] means the same thing to everyone who uses it”. To

ensure reliable meanings, the coding was then discussed among the two lead authors (Krippendorff, 2013).

Table IV.
Description of the methodology followed

Step	How	Examples	Tools used	No. of posts analysed
1. Concept extraction	Extracting concepts from downloaded messages	Company, companies, firm were grouped as “company”; report, reporting, to report are grouped as “report”	Text mining using the software Leximancer	1,651
2. Managerial practices extraction	Extracting examples of managerial practices from posts that show high presence of IC and sustainability themes	Hiring policies to support human capital and social sustainability. The case of Company A	Content analysis using the software NVivo	150

Table V.
Concept and theme extraction

Category	Determinants	Words	No. of words	No. of posts	Average words per post
Intellectual capital	Human capital	ability, culture, education, employe*, human, leader*, leading, management, work, working brand*, campaign, collaboration, commun*, consumer*, conversation, customer*, investor*, market*, media, partner*, * relationships, stakeholder*, supply, team, trust, understand* chain, data, design, governance, models, per cent, practices, process, programme, system, systems, technology	8,237	1,651	4.99
	Relational capital		3,448	1,651	2.09
	Structural capital		3,438	1,651	2.08
Sustainability	Total/average		15,123	1,651	9.16
	Financial	business, companies, corporate, development, down, economic, financial, growth, industry, investment, money, organisations, practices, products, programme, report, value	48,020	1,651	29.09
	Environmental	carbon, climate, energy, environmental, green, nature, resources, use, waste, water	17,201	1,651	10.42
	Social	change, children, community, countries, food, future, global, government, health, human, including, life, local, media, movement, national, need, people, place, political, power, public, rights, social, support, team, time, women, world, real, research	59,568	1,651	36.08
Total/average			124,789	1,651	75.58

4. Insights

The results depicted in Table V show that managers and practitioners focus on both IC and sustainability issues. For example, in a post published on 30 September 2013, Sarah Cahan states:

If your company is in the process of creating a CSR program, focus on an issue that is material to your business or industry. Doing so will allow you to best leverage the full suite of your assets, from operations and intellectual capital to contributions and philanthropy (Post ID = 694).

The most discussed determinant of IC is human capital with the concept referenced 8,237 times. Several contributors claim the need to improve human capital to develop sustainability. For example, Piya Mahtaney (10 September 2013) states:

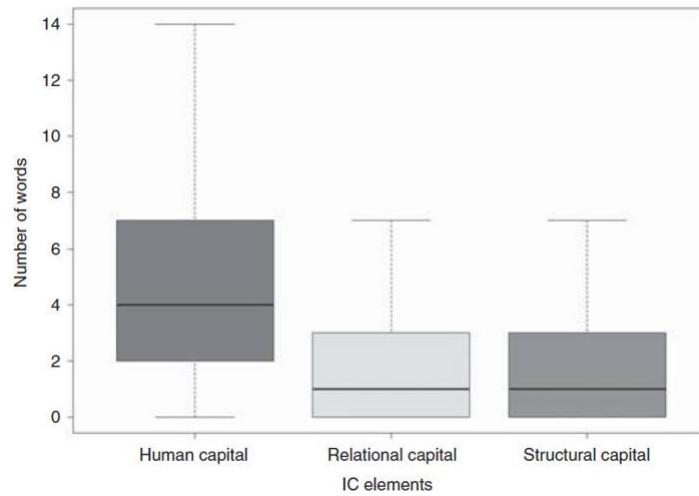
The role played by human capital formation, particularly education, is critical in facilitating a context that can propel development. Growth-induced measures, if unaccompanied by an adequate increase of human capital formation, actually disempower growth, making it not only short lived but also the crucible of inequality-and, in more than a few instances, political instability (Post ID = 721).

These results show some potential for expanding the definition of human capital to include both staff and external stakeholders competencies (Abeysekera and Guthrie, 2004). They indicate a larger connection between these two forms of human capital and sustainability. They also build on Pedrini's (2007, p. 346) findings, which highlight the need for developing a common human capital disclosure system that is not only focused on a company's IC but is somehow also connected with external society. Such posts demonstrate how these concepts are strongly connected to the fourth stage of IC research.

Additionally, the results show that relational and structural capital are less discussed in CSRwire.com blogs with only 3,448 and 3,438 references, respectively. While practitioners talk about all the determinants of IC, there is a stronger emphasis on human capital – see Figure 1.

The results in Figure 1 confirm Cinquini et al.'s (2012) findings that human capital "is an essential theme in sustainability reports and that human capital is viewed as an asset with disclosure used to build mutual trust and good relationships with employees". Practitioners of CSRwire.com include all the elements of IC in sustainability management frameworks, with a strong emphasis on human capital, and do not limit the discussion to reputational issues (López-Gamero et al., 2011).

Figure 1.
A comparison of IC determinants in blog posts



Focussing on sustainability, the results in Table V show that the most discussed topics relate to economic sustainability (with 48,020 references) and social sustainability (with 59,568 references). Environmental sustainability is the least discussed topic with only 17,201 references. Additionally, the results in Table V were used to narrow down our focus during content analysis to the main managerial practices discussed by practitioners on CSRwire.com. Table VI lists the practices to be further discussed in the following subsections.

Table VI.
Managerial practices that link IC and sustainability

Sustainability	IC determinants	Managerial practices	Reported company cases, studies, and/or opinions ^a
Economic sustainability	Human capital	Improving motivations	PepsiCo (1179)
		Creating emotional engagement	Adidas, Campbell, LinkedIn (0011)
		Increasing loyalty and employee retention	Arabesque survey (1,076)
	Relational capital	Developing market trust	Spence survey (0547)
		Increasing awareness	Opinion expressed by a consultant (0048)
		Managing investor relationships	UPS (0078)
	Structural capital	Developing new artificial intelligence tools for investor relation management	TruValue Labs (0078)
		Using ICT to support transparency	Coca Cola, Danone, Frutama (0722)
		Developing team working contexts	Opinion expressed by a consultant (1,100)
Social sustainability	Human capital	Aligning cultures, values, and causes	Aetna(0401)
		Guaranteeing diversity	IBM (1,000)
		Using collective intelligence	Google, Apple, Unilever, LEGO, and H&M (0086)
	Relational capital	Accessing ethical indices	UN (1,076)
		Increasing accountability and transparency	Eileen Fisher and Indigenus design (0655)
	Structural capital	Developing new ICT tools to support accountability and transparency	
Environmental sustainability	Human capital	Aligning cultures, values, and causes	Cabot (0921)
		Stakeholder involvement	Opinion expressed by a consultant (0019)
	Relational capital		Volvo (0021)
		Redesigning business models	Rype Office (0026)
		Rethinking measurement systems	Mosher research (0048)

Note: ^aNumbers in brackets refer to the number of the post downloaded

4.1 Economic sustainability and IC

The results of the content analysis provided in Table VI show that these practitioners discussed several managerial practices to support economic sustainability and increase their IC. Focussing on human capital practices, Earth Share (10 September 2012) states:

Research shows that organisations with engaged employees perform better, while billions of dollars are lost due to disengaged workers. In our experience, employees develop a deep sense of satisfaction and pride when participating in workplace giving programs, invaluable to both the employees and the business (Post ID = 1179).

Additionally, the need for aligning cultures starts with hiring policies. As Shannon Houde (1 June 2016) claims:

Millennials also want to work for companies on the forefront of change, yet a lack of diversity and inclusion remains one of the largest barriers to innovation. Fostering a diverse workforce starts with hiring practices. Attracting, recruiting, and hiring diverse talent should be an easy challenge to tackle. To help increase diversity, I recommend stating specific hiring challenges and goals, like Campbell's and LinkedIn, are doing. Our differences make us stronger. They make our ideas better, in the business world, it is proven that diversity makes more money and leads to better results (Post ID = 0011).

These results build on previous studies on IC. According to Dahlgaard-Park (2012), altruistic and spiritual factors have not been formally recognised as contributors to human motivation, and many managerial frameworks ignore their importance. Wasiluk (2013) argues that "we need a spiritual approach to managing people, to support a sustainable economy". However, while most of the models developed by IC research are descriptive and idealistic, IC rhetoric on human capital needs to be transformed into practices, and strong evidence to support the rhetoric is required (Dumay and Lu, 2010). For example, Earth Share provides evidence and practical examples in a post published on 10 September 2012 stating, "A Lloyd Morgan survey showed that engaged employees are 87 percent less likely to leave the organisation, and emotional engagement is four times more valuable than rational engagement in propelling employee effort". The results and examples provided by CSRwire.com contribute to this dialogue not only by showing that several companies are addressing this issue but also by giving examples of managerial practices to support developing humancapital and economic sustainability. Additionally, the posts analysed focus on the role of relational capital to support economic sustainability. Gavin Power (12 December 2012) states:

Based on an evaluation of over 200 studies published in September 2014 by London, UK, asset manager Arabesque and the University of Oxford, eighty percent of the studies evaluated demonstrated that systematic sustainability management exercises a positive influence on share prices. So potential investors would be well advised to take environmental, social and governance (ESG) criteria into consideration when making investment decisions (Post ID = 1076).

A similar position is expressed by Adam Spence (22 January 2014):

A growing group of investors is looking for both a financial return and a measurable means of knowing their capital is going to support a better world. From foundations and family offices to major financial institutions and everyday investors, many are choosing

to invest in affordable housing, renewable power, sustainable food and enterprises employing persons facing barriers to employment (Post ID = 0547).

This position highlights the possible need to develop new forms of voluntary disclosure. As Margo Mosher (11 February 2016) states:

Integrated reporting is one aspect of transparency that both drives and reflects a company's integrated approach to sustainability. The process of creating an integrated report can bring together cross-functional teams, foster greater understanding about how the company creates value and spotlight areas ripe for further integration. Integrated reporting helps companies communicate the integrated nature of their business model (Post ID = 0048).

The results also support IC dialogue among both the critics of IC disclosure and its "true believers" (Dumay, 2016), such as investors seeking information about sustainability. Relational capital allows the development of trust based on the information disclosed, allowing companies to go beyond simple eco-labelling (De Marchi and Grandinetti, 2013). Integrated forms of reporting IC and sustainability can support these new challenges.

However, while the literature seems focussed on traditional forms of reporting, companies, such as UPS, are developing new artificial intelligence tools to work in a Web 2.0 economy. As Jess Handley (12 November 2015) states:

Companies such as San Francisco based TruValue Labs have developed specific tools that aggregate a wide range of sustainability-related information, extract meaningful patterns and useful signals, and serve up interpretations and conclusions to business users. By using artificial intelligence to make sense of sustainability data and stakeholder reactions in real time, companies, investors, and others may soon no longer be dependent on traditional sustainability or analyst reports, which are not updated in real time and arguably do not capture the full range of data needed to assess performance and create value. For example, UPS has been using such tools to gauge the effectiveness of its sustainability efforts more accurately and enhance its integrated reporting. As a result, in addition to new market intelligence UPS executives are gathering, the company is able to market its sustainability efforts better and assert itself as part of the transparent company movement (something which, as mentioned in the previous blog post in this series, is quickly becoming a non-negotiable expectation for Millennial consumers and employees) (Post ID = 0078).

Additionally, sustainability provides new markets to meet consumer needs. According to Maximilian Martin and William Burkart (9 September 2013):

The world of virtuous consumption is expanding fast, with a market turnover of roughly \$300 billion in the U.S. alone [...] But many products and services promoted to this consumer segment are thinly veiled marketing stunts, with questionable "health" or "sustainability" contents [...] Future growth and business innovation for many multinational companies will need to directly factor social inequality, unrest, and global resource and commodity shortages into the development of products and services (Post ID = 0722).

However, the sustainable innovation required to address these new markets is very complex, and structural capital can support this process. As argued by López-Gamero et al. (2011), sustainability often requires structural capital improvements, new technology, and sometimes new environmental departments within organisations. Additionally, human capital and relational capital development should be supported by a collaborative approach as outlined by Gavin Power, Deputy Director of UN Global Compact. In a post published on 12 December 2012, Power argues that companies should break down silos, such as those between investor relations and CSR departments since 49 per cent of CFOs believe that there is a strong link between sustainability and financial performance. This collaborative approach requires new procedures. For example, at Aetna (the third biggest health insurance corporation in the USA), the need to coordinate employees' and volunteers' efforts pushed the company to create an internet site called Aetna's Employees Reaching Out.

Additionally, specific measures are required to track the success of innovations and how they are reported. According to David Wilcox (16 November 2012):

Understanding and measuring whether a particular intervention has succeeded has become so complex – think of randomized control trials – that it is not surprising that many companies default to those programs put forward by employees working in their own communities (or in the case of companies working in developing countries, working in the communities that are impacted by their presence) (Post ID = 1100).

4.2 Social sustainability and IC

According to Shapiro (2006, p. 324), improvements in quality of life affect local human capital that could support company productivity. Jackie Norris and Sarah Boison (7 May 2014), identify some of the best practices to improve life conditions. One of the examples provided is, again, Aetna:

Aetna's culture encourages employees to give back to the community [...] With a commitment to help people around the world to live healthily and to have sustainable lifestyles, Aetna has integrated its employees and philanthropic efforts with its business model, centered on healthy living (Post ID = 401).

Jackie Norris (12 February 2013) provides a similar example from IBM:

IBM uses intense management involvement to combine such bottom-up employee-community relationships with top-down multimillion-dollar grants to contribute to neighborhood life at every level. This integrated commitment earned the globally integrated giant top honors in community partnership this year from The Civic 50, a ranking of America's most community-minded companies (Post ID = 1000).

It is clear that internal human capital can be used to improve lifestyles and provide local support. Additionally, by enlarging human capital boundaries to include external society, companies can access collective intelligence (Secundo et al., 2016). Collective intelligence describes "a group of individuals, who are not necessarily required to have the same attitudes or viewpoints, however they work together to find solutions to a given problem" (Secundo et al., 2016) and helps companies to achieve higher sustainability impacts. As Jess Handley (29 October 2015) states:

Taking this one step further are brands such as Google, Apple, Unilever, LEGO and H&M, among others, who invite consumers to help solve product development challenges together through beta testing, crowdsourced innovation competitions, and other means of accelerating promising entrepreneurial contributions from multiple stakeholder groups. Consumers are thus a more integral part of the process, not only ensuring a higher level of brand transparency but a higher level of engagement too (Post ID = 0086).

To develop this process, "the establishment of good RC [relational capital] not only among the subjects belonging to the ecosystem but also between the ecosystems and external actors is fundamental for cultivating the best operational framework for its implementation" (Borin et al., 2015). For example, Gavin Power, Deputy Director of the UN Global Compact (12 December 2012) states:

A dramatic move is underway by investors to increasingly integrate environmental, social and governance (ESG) factors into the investment process. This is perhaps best reflected in the Unbacked Principles for Responsible Investment (PRI) – which now claims over 1,000 signatories managing \$35 trillion in assets. The interest in ESG reporting and its link to financials that we see bubbling up from investors presents many intellectual and management challenges – but is a good problem to have, to be sure. It reflects the belief that proper management of sustainability issues can improve corporate performance – and hence investment performance (Post ID = 1076).

Recently, Dumay et al. (2016) called for a better understanding of the actual implications of sustainability reporting. Power's results show that sustainability reporting can drive social

sustainability with consistent investments in developing countries. To help this process, some of the best practices reported by CSRwire.com require accountability and transparency. Carol Sanford (25 October 2013) discusses the case of a partnership between Eileen Fisher, a premier brand in high-end clothing, and the company indigenous design:

Their new venture in that nodal intervention, created in collaboration with Worldways, is the Fair Trace Tool. It makes it possible for brands to share, in a transparent way, their story of fair trade and the story of the artisans whose lives are transformed by it. Through the Fair Trace Tool, everyone can see who makes what they wear and grows what they eat. Customers become closer to them and see their well-being as connected to the business. Such transparency will have a positive impact on thousands of artisans around the world (Post ID = 0655).

Technology can help companies find new solutions to support accountability. According to Dumay and Cai (2015, p. 144), annual reports are the most analysed research source for voluntary disclosure and often outline a company's desires rather than always providing direct evidence of managerial action. However, contemporary communication channels are more complex and unstructured. As Zhang (2016) states, the internet and social media redefine "the concept of media as a medium that disseminates information". The results of this research provide support for these statements, showing how structural capital can contribute by building tools that increase transparency and accountability to support social sustainability.

4.3 Environmental sustainability and IC

The results of our content analysis show that companies have the ability to educate their employees on sustainability issues, such as water use. For example, Francesca Rheannon (11 April 2013) discusses the case of the cooperative Cabot, owned by 1,100 farmers throughout New York and New England, stating:

That's what Cabot does: it calculates the sustainable share of water use of each employee during the hours of work within the context of the watershed population's overall use of water [...] They're now leading with the economic allocation, using percentage contribution to GDP, in all their context-based work (carbon, water, and now waste) (Post ID = 0921).

Lessons learned by employees in their daily work activities are then exported into the local context. These results build on those of Dameri and Ricciardi (2015), who state that the human capital of smart cities relies on general attention to the environment together with related action: reducing the waste of natural resources and increasing the possibility of recycling it, for example. Therefore,

by educating internal human capital, companies can increase external human capital which, in turn, increases the IC of smart cities. Additionally, a sense of participation in the environment can increase employee satisfaction, as outlined by Kelly Eisenhardt (4 May 2016):

We've brought attention to brand new technology in the lighting space, building products, transportation, energy, smart controls, just to name a few. Launching new and positive solutions brings us both a sense of purpose and fulfillment (Post ID = 0019).

Additionally, to reduce environmental impact and produce greener products, companies need to use their relational capital and create a shared dialogue within their entire value chain. Megan Wild (29 April 2016) provides an example:

In 2013 Volvo CE's Braas branch began operation as the world's first carbon-neutral construction equipment factory. This Swedish-based facility is powered entirely by wind, hydropower, and biomass renewable energy resources, putting them a step ahead of even most automobile manufacturers [...] They also avoid waste by planning ahead and working with suppliers to return unused materials and empty containers, avoiding excessive packaging and using suppliers that also practice environmental responsibility (Post ID = 0021).

Considering how to develop products in a way that respects the environment can have important impacts on a company's business model, as Bryn Huntpalmer (6 April 2016) describes:

Furnishing manufacturers have a waste problem. Furniture disposal adds dangerous amounts of waste to already overloaded landfills [...] Rype Office showed that they had successfully divided their business into three channels – new furnishings, of course, but also refurbished and resale offerings. They also implemented new payment options – a leasing program allowing customers to rent furniture for a monthly fee. That leasing option is key – many thought leaders say that it is access, rather than recycling, that will inform the next wave of manufacturing, representing a dramatic shift away from the current paradigm of ownership (Post ID = 0026).

Similar results are provided by Margo Mosher (11 February 2016), who states:

Our research suggests that integrating sustainability can also lead to greater employee engagement, better decision-making and a more holistic and comprehensive understanding of risks and opportunities. In addition to corporate benefits, bringing sustainability issues into the business model enables a company to contribute to solving today's challenges such as water scarcity, climate change, inequality, under and over nutrition (Post ID = 0048).

These results show that business models are correlated with structural capital (Namvar and Khalilzadeh, 2013; Philipson, 2016). They also provide support for Nielsen et al. (2017) who state, "there is an intricate relationship between business models and IC" implying IC's relationship with sustainability.

5. Critique

Our analysis shows that practitioners discuss IC with a strong emphasis on human capital. Additionally, IC is strongly linked to sustainability in CSRwire posts, and several practical examples are provided. Therefore, this study confirms that, from a practitioner's perspective, IC is something more than a "management fashion" (Schaper, 2016, p. 52) and sustainability is more than a "feel-good program" (Foote et al., 2010, p. 799). However, despite these encouraging results, our findings show that there are elements to reconsider in IC research as discussed in the following subsections.

5.1 Managerial practices that require attention by IC researchers

Findings in Table VI show 19 managerial practices specifically discussed by practitioners, and several add new perspectives to IC research. For example, the need to develop a more spiritual approach to human capital is specifically analysed offering practical solutions to the problem. Similarly, the role of new business models to support sustainability is widely discussed by practitioners that provide concrete examples of how some companies are addressing those issues. More generally, our results show that practitioners are typically very specific when discussing managerial practices, but IC scholars sometimes develop IC models that are too general (Dumay and Lu, 2010). Ardley (2008) discusses this problem claiming, "Scholars' desire to reduce real world activity to overarching explanations has led to the simplification of theory". As a result, "academic research has become less useful for solving practical problems and [therefore] the gulf between theory and practice in the professions is widening" (Van De Ven and Johnson, 2006). Thus, there is a need to reduce the distance between academics who are too focussed on grand theories (Dumay and Lu, 2010) and practitioners who are very focussed on solving specific issues.

5.2 Managerial practices and the academic-practitioner divide

A divide between academics and practitioners can be problematic because they often have stereotypical views of each other (Anderson et al., 2001) and even the best evidence is often not used to solve problems and make decisions (Wofford and Troilo, 2013, p. 41). Scholars typically use robust methodological approaches, while practitioners use IC and sustainability to achieve their own ends. So, when scholars fail to address relevant problems, and instead produce pedantic science (Anderson et al., 2001), it only serves to reinforce these

stereotypes, which further contributes to the divide (Wofford and Troilo, 2013). Romme et al. (2015) proposed a solution for bridging the gap by asking scholars to search for trading zones where different communities with disparate meanings and logics can converse and collaborate. These zones could be open access journals (Sample, 2012), blogs (Flottum et al., 2014), or take a myriad of other forms. According to McKerlich et al. (2013, p. 90), publishing research findings as open access have a 47 per cent probability of being cited in widely used sources of knowledge, such as Wikipedia. Additionally, blogs, wikis, and other Web 2.0 tools are providing new zones where academics and practitioners can exchange information and ideas. Our analysis of CSRwire shows that none of the top contributors to the blog disclosed an academic position. Thus, we argue that, to reduce the divide, scholars should consider blogging to establish a collaborative trading zone with practitioners.

5.3 Managerial practices, IC reporting, and new communication tools

Our results provide evidence that the growing attention paid by investors to the environmental and social impact of their investments is driving new information needs and is influencing the importance of IC's role within organisations. Practitioners are recognizing the need to develop specific forms of communication to track social innovation. Meanwhile, scholars are recognising the need to adapt traditional corporate reporting and voluntary disclosures to provide more useful information and foster corporate transparency and accountability (Dumay et al., 2016). Our results also provide evidence that practitioners are aware of the need to integrate company reporting and disclosures. In its current form, integrated reporting (International Integrated Reporting Council, 2013) aims to represent a company's performance, including sustainability and its six capitals representing economic, social, and environmental resources. Additionally, Bernardi and Stark (2018, p. 16) theorise that the greater the level of environmental, social, and governance performance disclosure, the greater the effects of IR. Therefore, an integrated reporting framework may be relevant to both academics and practitioners as discussed in some of the posts analysed. However, despite this recognised need for support in integrated reporting, our findings show that many practitioners propose a new approach to company communication processes. As Massaro and Dumay (2017) outline, the way that companies and investors communicate is evolving, and the development of the internet provides new ways to share, discuss, and disclose sustainability information. IC research focusses mainly on annual reports as a traditional source of information (Dumay and Cai, 2014), but Lardo et al. (2017, p. 65) critique this approach, recognising that "annual reports are backward-looking, and contain limited information about the prospects of a company from an ICD perspective". Accordingly, Dumay and Guthrie (2017, p. 30) claim that the way "IC information and its communication

emanate from sources other than the traditional media associated with a corporation's IC disclosure and reporting is of growing interest". Practitioners show examples of companies that have addressed this issue by integrating traditional communication tools with new artificial intelligence tools to integrate and analyse their information flows. Therefore, companies using integrated reporting frameworks as a communication tool should focus on a back and forth process rather than a one-way approach. Two-way communications may better help managers to understand a stakeholders' needs and adapt their communication systems accordingly.

6. Conclusion, further research, and limitations

In concluding this paper, we recall the motivation of the study. The starting point of this research was the evolution of IC through several stages and the burgeoning relationship between IC and sustainability. Our results provide evidence of the inter-connection between IC and sustainability and, in several cases, drawing boundaries was difficult. For example, by supporting the education of employees, especially in developing countries, companies not only increase their human capital but also contribute to the development of a better, more politically stable society. This approach links internal and external human capital with other dimensions of sustainability. Additionally, as evidenced in the posts, companies are providing local support to create shared values and a more inclusive work environment that encourages employees to improve their lifestyles. Such efforts demonstrate a better understanding of a local community's problems and use collective intelligence to involve stakeholder knowledge in the product design process. Finally, some practitioners explain how IC can support business model changes to redefine traditional needs and concepts.

Introducing new approaches in selling programmes to facilitate recycling is just one of many examples that demonstrate an awareness by practitioners of the need to extend the concept of IC outside the boundaries of their company using an ecosystem approach (Secundo et al., 2016). Extending IC into a broader ecosystem leans on the fourth stage of IC research, but there are more insights to be gained from the posts analysed. Our results show that IC and sustainability influence each other in answering a plurality of demands or logics because, while some posts emphasise financial returns (e.g. increased customer loyalty), others strongly focus on social and environmental impacts (e.g. water waste in the local community). Practitioners are aware of the need to move from an exclusive economic dimension of worth to a broader dimension that includes society and the environment. The results of this study support the view of Dumay et al. (2017, p. forthcoming) that "it is time to take off the boundaries of IC research and work towards reconciling the worth of IC to different people in different contexts, respecting that there will always be differences and that one view

should not always prevail". And yet, our results also show that practitioners are aware that a company-centric process of pure legitimisation, which conceptualises stakeholders as external evaluating judges (van Bommel, 2014), does not necessarily increase their worth (Patriotta et al., 2011). The practitioners on CSRwire.com show the need to create a dialogue (van Bommel, 2014) between practitioners and academics and between companies and stakeholders. Different forms of influence and worth exist, economic performance is not the only outcome of IC practices, and researchers should use a conceptual toolbox that includes different dimensions of worth. Additionally, even though different dimensions of worth exist, our results provide evidence that IC is not a concept that translates automatically into any economic, social, or environmental outcome (Dumay, 2009). There is strong evidence that practitioners require scholars to reduce the ambiguity between IC and its expected results. This opens the door to a potentially productive way of understanding IC and the complexity of economic, social, and environmental value. According to Dumay et al. (2017, p. forthcoming), IC researchers should change their research question from "What is IC worth to investors, customers, society, and the environment?" to 'Is managing IC a worthwhile endeavour?' Arguably, from a practitioners' perspective, IC and sustainability influence each other; they overlap and managing both is worthwhile. While several scholars claim a lack of significant innovation in some IC research fields (Cuozzo et al., 2017), practitioners are discussing new and innovative approaches that disrupt basic concepts, such as new forms of business models. These disruptions contribute to the IC dialogue among academics and practitioners and provide new challenges to address and force scholars to leave their ivory towers and start a new stage of IC research, accepting that "multiple orders of worth are known to competent actors" (Annisette and Richardson, 2011). Practitioners should be involved in the discussion. All in all, there is enough evidence to support the call for a new stage of IC research that extends the dimension of worth in a more inclusive dialogue with different actors.

6.1 Limitations

As with any study, this research suffers from some limitations. First, even though CSRwire is considered a leading source in the field of sustainability, focussing only on a single data source could lead to biased results. Second, the use of manual coding to extract best practices could mean that other interesting practices discussed by the practitioners were ignored. Third, the results of this analysis were derived from discussions occurring in a specific time period. Political issues, recent environmental disasters, and other topical contexts could have overly influenced the issues CSRwire bloggers posted. All these limitations can be used to improve further studies or enlarge the results of this analysis. if applied

to different sources and/or time periods. Additionally, some of the emerging topics discussed by practitioners that were identified in this analysis, such as the need to better focus IC, business models, and sustainability, could be used to develop new research.

Notes

1. The database Scopus was selected as a leading source in business, management, and accounting field (Massaro et al., 2016).
2. See www.csrwire.com/distribution (accessed 30 December 2016).
3. See www.csrwire.com/pages/services (accessed 30 December 2016).
4. See <http://info.leximancer.com/>
5. According to Miles et al. (2013), NVivo coding “is one of the most well-known qualitative coding. NVivo coding uses words or short phrases from the participant’s own language in the data record as codes”.

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Paper 2

The relationship between intellectual capital and sustainability. An analysis of practitioner's thought

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Abstract

The purpose of this chapter is to investigate how intellectual capital (IC) and sustainability influence each other in practitioners' perspective. Three steps methodology was applied to reach this purpose. First, the study employs a text mining analysis of 1651 posts published by practitioners in one of the leading sources of sustainability: the website CSRwire.com. Concepts extracted from the posts are then analyzed using a factor analysis to summarize them within themes. Finally, themes are analyzed to identify how IC and sustainability influence each other using a correlation analysis. Results show that IC and sustainability are complex topics. Practitioners discuss 17 main themes split into Financial (also known as Economic), Social and Environmental sustainability. The three main components of IC: human capital, relational capital and structural capital connect with most of these themes proving that IC and sustainability influence each other. Financial Sustainability, Social Sustainability, Environmental Sustainability, Intellectual Capital

Keywords Financial Sustainability, Social Sustainability, Environmental Sustainability, Intellectual Capital

1. Introduction

IC literature is evolving reaching a new stage of development (Secundo *et al.*, 2016). Indeed, in the first stage, IC research was oriented to reach a shared terminology around the concept of IC, creating a common understanding of IC potentiality (Guthrie *et al.*, 2012). The second stage of IC research arose in the new millennium with the aim of measuring, managing and reporting IC (Dumay and Garanina, 2013). While the first two stages of IC research were focused on the understanding of the concept and impact of IC on company value (Guthrie *et al.*, 2012), the third stage shows the development of studies that critically examine IC in practice, focused on its managerial implications (Dumay and Garanina, 2013). According to Massaro *et al.* (2018), the fourth stage of IC

research emerged more recently, with the aim of extending IC's boundaries into a wider ecosystem, including nations, cities, and communities. With this extended framework, the fourth stage of IC research states that IC is crucial to "to address the paramount ecological, social, and demographic problems that our societies are facing" (Dameri and Ricciardi, 2015, p. 861). Thus, IC research becomes essential to better understand the topic of sustainability.

While the fourth stage of IC research is relatively recent, sustainability has been studied since 1972 when the United Nations Conference on the Human Environment coined the term *sustainable development* (Hall *et al.*, 2010). The key outcome of these original studies is that present generations cannot grow while compromising the ability of future generations to meet their needs (Brundtland Commission, 1987) and even though there are "no right or wrong definitions" of sustainability (Isaksson and Steimle, 2009, p. 180), a generally accepted definition identifies three main pillars: financial (also known as economic), social, and environmental sustainability (Wasiluk, 2013, p. 103).

Interestingly, according to Massaro *et al.* (2018), the literature on IC and sustainability is growing, but there is the need to study these topics more critically (Dumay and Garanina, 2013). Dumay (2016, p. 171), citing a colleague, Aino Kianto, states: "I find [IC] not being practiced by managers as much as it's being preached by us academics." According to Massaro *et al.* (2015) academics need to leave their ivory towers and engage fruitful discussions with practitioners. Scholars are sometimes accused of doing research that contributes little if anything to practice (Evans *et al.*, 2011) without listening practitioners' point of view. As Tucker and Lowe (2014) contend, practitioners are from Mars and academics are from Venus. To fill the academic-practitioners gap and give practitioners full voice, this research has the following research question:

RQ: how intellectual capital (IC) and sustainability influence each other in practitioners' perspective?

The rest of the chapter is organized as follows. The next section presents the research methodology. The following section displays the results, while an ending section focuses on discussion and conclusions.

2. Research method

To answer the research question, this chapter investigates one of the most important blogs in the field of Sustainability: CSRWire.com. Indeed, CSRWire is a digital media platform, founded in 1999, with over 70,000 readers per month and over 87 million monthly views¹. Data are collected downloading all the messages

¹ See <http://www.csrwire.com/distribution>, accessed on December, 30th 2016.

posted by practitioners and managers working in the field of sustainability in the period October 2010 (first message available) to July 2016. A total of 1651 messages were downloaded for a total of over 1,5 million words. Data analysis was conducted in three steps as presented in Table I and discussed as follows.

Table I.
Description of the methodology followed

Step	How	Examples	Tools used	N. of posts
1. Concept extraction	Extracting concepts from downloaded messages	Company, companies, firm were grouped as "company"; report, reporting, to report are grouped as "report"	Text mining using the software Leximancer	1,651
2. Theme extraction	Grouping concepts to shape more complex themes	Company and report were grouped as "company report"	Factor analysis using the software R	1,651
3. Theme correlation	Searching for themes often discussed together	"Company report" and "relational capital" show a statistically significant correlation	Correlation analysis using the software R	1,651

The first stage was to import the downloaded posts into the software Leximancer for concept extraction. According to Dumay (2014, p. 1261), "Leximancer allows us to analyze qualitative data, thus avoiding the subjective and labor intensive aspects of manual data coding". Additionally, Leximancer offers an automated text mining process (Ignatow and Mihalcea, 2016) that determines the concepts resident in the text which are then analyzed as follows:

- tokenisation – to identify similar words;
- stop word removal – to identify and remove pronouns (e.g. I, we, us), determiners (e.g. the, a) and prepositions (e.g. in, on);
- stemming and lemmatisation – to identify and group words with similar semantics together (e.g. constructing, construct, construction); and
- export – to analyze the results using various tools such as statistical techniques.

The extracted concepts were coded as either IC or sustainability. Scholars usually refer to IC according to its determinants: human capital, relational capital, structural capital (Albertini, 2016; Massaro, Dumay and Bagnoli, 2015). Therefore, concepts referring to those categories were coded as IC in keeping with previous studies (Goebel, 2015, p. 686). Similarly, sustainability was coded according to its determinants: social sustainability, environmental sustainability and financial sustainability (Wasiluk, 2013, p. 103) in keeping with these existing

classifications (Souza *et al.*, 2015). Manual inspection was conducted by the author. Table II depicts frequency of each concept measured in terms of the total number of codings and the average frequency per post.

Table II
Concept frequency

Category	Determinants	Total Frequency	Average frequency per post
Intellectual capital	Human capital	8,237	4.99
	Relational capital	3,448	2.09
	Structural capital	3,438	2.08
	Total	15,123	9.16
Sustainability	Financial	48,020	29.09
	Environmental	17,201	10.42
	Social	59,568	36.08
	Total	124,789	75.58

The second step was the development of statistical analysis, using software R (R Core Team, 2014). An exploratory factor analysis with variance maximization (Varimax) rotation (Gie Yong and Pearce, 2013) was undertaken to identify any underlying themes. Using this approach meant similar dictionaries could be combined (Wang *et al.*, 2016, p. 366) to retain more complex themes, i.e., themes that have eigenvalues $\geq 1^2$. Text analysis based on word counts allows basic categories, frequencies, and contexts to be identified, but factor analysis can detect themes from patterns of words that are frequently reported together (Isaac *et al.*, 2011, p. 59). For example, if the words 'business', 'corporate', and 'value' are often used within the same document, this probably means those documents refer to the theme of 'business value'. Such approach was used by Isaac et al. (2011) to analyze gender differences in medical performance evaluation and by Wang et al. (2016) to analyze US weekly trends in work stress on Twitter. The results showed that while financial, social, and environmental sustainability are distinct and dominant themes, human, relational, and structural capital could not be further split into sub-categories.

In the third step, Spearman correlation analysis was used to determine the relationships among and between the sustainability themes and IC determinants extracted in the second step. According to Reimann et al. (2008), the Spearman correlation provides a non-parametric (distribution-free) measure less influenced

² One key element in factor analysis is to define the number of factors to retain. According to Gie Yong and Pearce (2013, p. 85), "One criterion that can be used to determine the number of factors to retain is Kaiser's criterion which is a rule of thumb. This criterion suggests retaining all factors that are above the eigenvalue of 1."

by outliers. Therefore, considering that strongly focused posts can show higher concentration of some themes and meet therefore the concept of outliers, this paper employs the Spearman correlation. This analysis highlighted the frequently discussed concepts that showed more agreement among blog posters.

3 Results

Results show that both IC and sustainability are well-discussed topics among practitioners.

Focusing on IC, human capital is the most discussed topic with 8,237 references. Relational capital and structural capital are less discussed with 3,400 references each. Interestingly, human capital, relational capital and structural capital cannot be split into subcategories. Thus, the topic of IC is widely discussed among practitioners, with human capital as the most discussed topic.

Focusing on sustainability, the results show that the most discussed topics relate to financial sustainability (with 48,020 references) and social sustainability (with 59,568 references). Environmental sustainability is the least discussed topic with only 17,201 references. This analysis underlines the importance of sustainability and provides some initial insights into its connection with IC. Additionally, results of the exploratory factor analysis reveal broader themes within the determinants of sustainability. More precisely, six major themes are discussed regarding financial sustainability; social sustainability comprises seven major themes, and environmental sustainability features four major themes. Table III depicts the results of the factor analysis.

Table III
Factor analysis and themes extraction

Sustainability determinants	Factor label	Words and factor loadings*
Financial	F1: Economic growth	econom* (0.97); growth (0.36)
	F2: Investment return	financial (0.76); investment (0.35); money (0.55)
	F3: Company reporting	compan* (0.97); corporate (0.32); report (0.33)
	F4: Business value	business (0.48); corporate (0.36); practices (0.46); value (0.42)
	F5: Industry	industry (0.66)
	F6: Corporate production	corporate (0.44); products (0.43)
Total variance explained – 33%		
Social	F1: Human rights	human (0.97); rights (0.90)
	F2: Need of change	change (0.40); future (0.31); need (0.35); people (0.37); place (0.30); time (0.37); world (0.47)
	F3: Political action	countries (0.36); government (0.62); national (0.31); political (0.34); public (0.37)
	F4: National situation	national (0.54); political (0.32); power (0.35); real (0.50)

	F5: Local support	community (0.78); local (0.48); support (0.33)
	F6: Life	children (0.35); countries (0.31); food (0.31); health (0.44); life (0.31)
	F7: Social media	media (0.60); social (0.58)
		Total variance explained – 28%
Environmental		
	F1: Climate	carbon (0.97); climate (0.48); energy (0.38)
	F2: Waste	use (0.67); waste (0.46); water (0.37)
	F3: Green	green (0.73)
	F4: Natural resources	nature (0.45); resources (0.48)
		Total variance explained – 36%

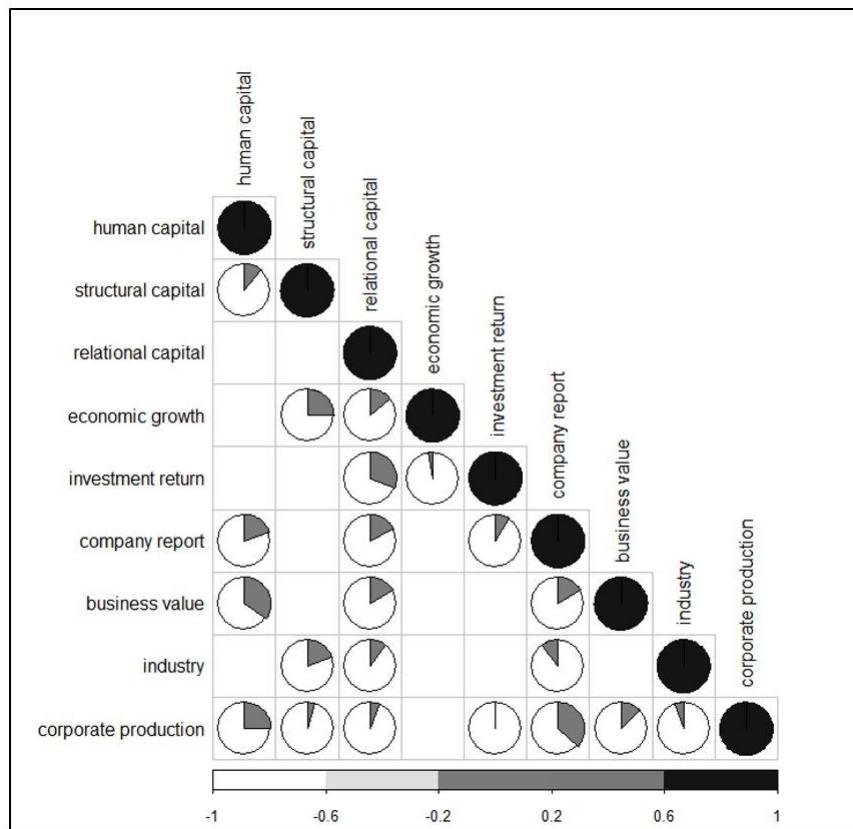
* Factor loadings are in brackets

The results in Table II confirm that sustainability is a broad topic where sustainability terms, their definitions, and interconnections are crucial for understanding specific aspects to move societies toward sustainable development (Glavić and Lukman, 2007, p. 1884). This analysis helps to shed light on which main topics practitioners actually discuss. To understand the main connections between IC and sustainability, this paper focuses on the three main dimensions of sustainability (financial, social, and environmental) and connects them with IC using a correlation analysis. The following subsections provide the results of this analysis.

4 IC and financial sustainability relationship

As previously discussed to understand how the topics of IC and financial sustainability are related, we developed a correlation analysis and results are reported in Figure 1. To assure that relations observed in a sample are not simply due to chance, p-value measures have been calculated and insignificant correlations have been omitted from the figure. Thus, each pie chart depicts the correlation index. Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have not been included.

Figure 1.
Spearman correlation matrix of IC and financial sustainability*



* Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have been omitted.

Findings show that human capital is discussed in relation to company reports (19%), business value (34%), and corporate production (24%). For example, discussing the role of human rights reporting, Abhishek Ranjan (5 Dec 2016) states:

"Human Resources (HR) and Corporate Social Responsibility (CSR), in essence, had the same long-term goals: how to add the maximum value to the organization in the long run. Given their mutual focus on the human element of the organization, HR and CSR strengthened and supported each other. This brought about stakeholder value, to supplement the traditional shareholder value.". (Post ID = 055)

These results confirm previous studies that find human capital to be essential to improving firm performance (Claver-Cortés *et al.*, 2009). Interestingly, structural

capital relates more to economic growth (24%), industry (19%), and corporate production (5%). These results confirm the role of structural capital in developing innovations that can improve or maintain the well-being of a community (An *et al.*, 2014, p. 578). For example, Elisabeth Comere (02 Feb 2015) states:

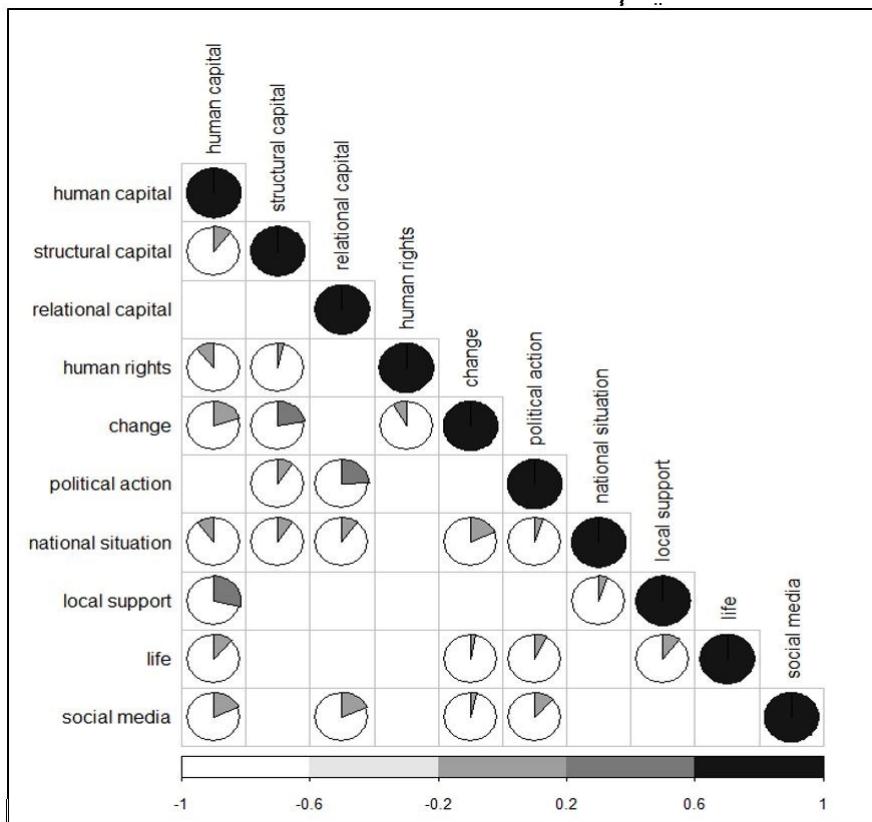
"Coca-Cola understands a number of factors are threatening water security, and clean and accessible water is critical to the health of communities, ecosystems and economic growth and for Coca Cola, water is the main ingredient in its beverages. It is central to their production process and it is necessary for cultivating the agricultural crops used as ingredients. As industry stewards, they have set a goal to return the equivalent volumes of water they use back to communities and the ecosystem by 2020 to become water neutral."

Only relational capital is discussed together with all the themes of financial sustainability. More precisely, relational capital correlates with economic growth (14%), investment return (31%), company report (17%), business value (16%), industry (10%), corporate production (7%). These results confirm the role of relational capital both on increasing reputation, building stakeholder relationships (Pedrini, 2007, p. 353) but also in supporting innovations (De Marchi and Grandinetti, 2013, p. 569) IC and social sustainability relationship.

5 IC and social sustainability relationship

The topic of IC is connected with social sustainability by several blog posters. In Figure 2, each pie chart depicts the correlation index between the three components of IC (human capital, relational capital and structural capital) and each element of social sustainability (human rights, change, political action, national situation, local support, life, and social media). To assure that relations observed in a sample are not simply due to chance, p-value measures have been calculated and insignificant correlations have been omitted from the figure. Thus, each pie chart depicts the correlation index. Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have not been included.

Figure 2
Spearman correlation matrix of IC and social sustainability*



* Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have been omitted.

Findings show that to support their human capital, companies can behave ethically and with respect for people's values, and develop a social justification for the company (Pedrini, 2007). In turn, this supports the need to extend the fourth stage of IC research into a wider ecosystem. Indeed, human capital correlates with social sustainability's major themes ($p\text{-value} < 0.05$) such as human rights (11%), the need for change(20%), local support (28%), life (11%), and social media(18%). For example, Piya Mahtaney (10 sept 2013) states:

"The role played by human capital formation, particularly education, is critical in facilitating a context that can propel development. Growth-induced measures, if unaccompanied by an adequate increase of human capital formation, actually disempower growth, making it not only short lived but also the crucible of inequality - and, in more than a few instances, political instability" (Post ID=721).

Structural capital shows a statistically relevant correlation with the need for change (21%), political action (9%), and national situation (9%). Those results confirm that "at the structural capital level, the creation of specific know-how and knowledge flow mechanisms inside the ecosystems is crucial in developing its potential" (Borin *et al.*, 2015, p. 290). Indeed, structural capital is shaped by the systems, tools, and operating philosophy that speed the flow of knowledge inside and outside the organization (Cinquini, 2012, p. 538). For example, Jackie Norris (3 Jun 2014) states:

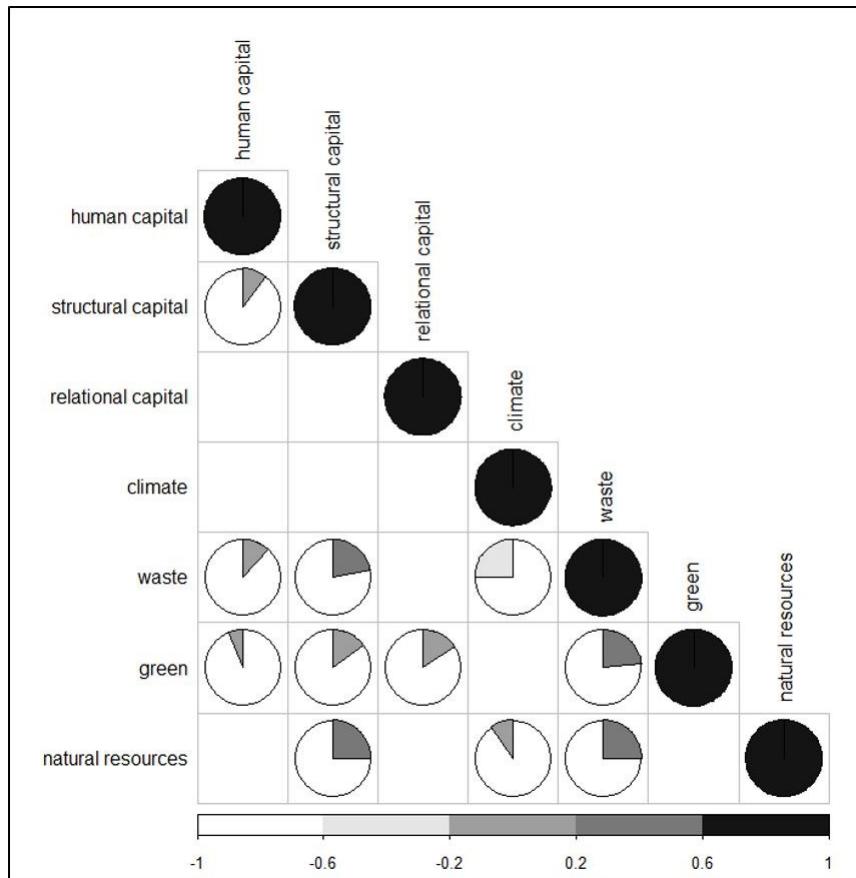
"At HP, Living Progress means creating a better future for everyone through its actions and innovations" (Post ID=366).

Interestingly, relational capital is only significantly statistically correlated with political action (23%), national situation (10%), and social media (18%).

6 IC and environmental sustainability relationship

The topic of IC is connected with environmental sustainability by several blog posters. Figure 3 reports results of the correlation analysis. To assure that relations observed in a sample are not simply due to chance, p-value measures have been calculated and insignificant correlations have been omitted from the figure. Thus, each pie chart depicts the correlation index. Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have not been included.

Figure 3.
Spearman correlation matrix of IC and environmental sustainability*



* Pie charts showing statistically insignificant correlations ($p\text{-value} > 0.05$) have been omitted.

Results of the correlation analysis show that human capital correlates only with the theme of waste (12%). According to Khalili et al. (2015, p. 31), environmental sustainability requires a new approach to reduce waste and increase energy efficiency that starts right from the product design. Companies, schools, and universities need to develop the human capital required to make such a transition, fostering the fourth stage of IC research (Secundo *et al.*, 2016). For example Robert Bikel (11 May 2016) states:

"a broader "Impact Economy" is forming around the idea of businesses leveraging their inherent power not just to abate but to elevate the human condition and restore the environment. But business owners who seek to take their businesses from "green" to "impactful" must be prepared to do the hard work, both internally and externally, to get there." (Post ID=016)

Structural capital correlates to waste (21%), green (15%), and natural resources (25%). This builds on De Marchi and Grandinetti's (2013, p. 570) findings that suggest existing technological competencies impact on companies' ability to develop environmentally friendly solutions. For instance, Andrea Learned (9 Jan 2015) states:

"Some may assume that considering sustainability in business could only add internal hoops and processes, though Davis has found incredible value by leveraging data to discover what might be removed to bring more value to human life and improve the business of VMCC. In the big picture, this means striving to take away the toxins or waste that harm the environment, all to improve health of humans on earth. At the level of running a facility, this might be as obvious as sorting through operating room waste to recycle as much as possible and lower landfill costs, or as seemingly obscure as thinking about whether it makes sense to decrease use of meat in hospital meals as a way to both improve patient health and lessen carbon emissions of food supply chain." (Post ID = 251)

Interestingly, relational capital is correlated only with green resources (15%). According to De Marchi (2012, p. 614), developing green products requires a different approach to innovation in which R & D cooperation assumes a central role, fostering the role of relational capital.

7 Conclusion

To conclude this work, the author wants to focus on the reasons that motivated the study. Several contributors call for a deeper understanding of practitioners' point of view. This piece of research focuses on 1651 messages with more than 1,5 million words posted by some of the most recognized experts on the field of sustainability in the blog CSRWire.com.

Results show that while there is still a gap that needs to be filled, practitioners' perspective help to build on theoretical contributions showing how IC and sustainability are strongly related. Results show that several authors connect the topic of financial sustainability with IC. For example, Hazel Henderson (4 Dec 2014) states:

Company accounting is modernizing with new standards to account for the six forms of capital, which companies can enhance or degrade: financial, manufactured, intellectual, social, human and natural capitals ... My advice to Japan in August 2001, "Japan is Not the Only Country Caught in the GDP Growth Trap," still stands. Change from GDP growth to quality of life; add an asset account to recognize the immense value of public assets, which will slash Japan's overstated debt to GDP ratio – and declare victory over the dead economics of the past. (Post ID = 268)

Similarly, Mark Parker, President & CEO of Nike states³, “Explore. Innovate. Scale. Collaborate. These themes define our sustainability journey, one that considers impacts across our value chain including labor, environment, and communities.” These results build on Dumay et al. (2016, p. 179) who state that the fourth stage of IC research should move beyond the concept of value creation from companies to communities. Researchers should view the espoused benefits of IC disclosure “from the perspective of what it can do for an economy, environment, and society, and a wider group of stakeholders beyond investors” (Dumay et al., 2016, p. 179). Therefore, results show that there is a shared view among practitioners and academics about the need for moving the role of voluntary disclosure forward to a more inclusive dimension incorporating the financial sustainability of companies and communities.

Additionally, results show that in practitioners’ perspective IC and social sustainability are strongly correlated. For example, Gavin Power, Deputy Director of the UN Global Compact (12 Dec 2012) states:

A dramatic move is underway by investors to increasingly integrate environmental, social and governance (ESG) factors into the investment process. This is perhaps best reflected in the UN-backed Principles for Responsible Investment (PRI) – which now claims over 1,000 signatories managing \$35 trillion in assets. The interest in ESG reporting and its link to financials that we see bubbling up from investors presents many intellectual and management challenges – but is a good problem to have, to be sure. It reflects the belief that proper management of sustainability issues can improve corporate performance – and hence investment performance. (Post ID = 1076)

Recently, Dumay et al. (2016, p. 179) called for a better understanding of the actual implications of sustainability reporting. Their results show that sustainability reporting can drive social sustainability with consistent investments in developing countries. Additionally, the topic of IC has been considered, moving the discussion on the role of wages to also guarantee gender diversity in developed countries. For example, Lisa Manley and Judy Sandford (13 Jan 2016) assert:

The “Fight for \$15” – an effort to increase the minimum wage – has engaged millions and found alignment in cities including New York, Los Angeles and Seattle. Debate also continues on wage parity between the sexes ... Salesforce is one company that has decided to take a stand on the issue. After reviewing its 17,000 employees’ salaries, the company revised its payroll to ensure men and women are being paid equally for similar jobs. It’s clear that human rights shouldn’t be viewed as purely an issue in developing

³ The comment is reported in a post published by Kelly Eisenhardt on a post published on 9 May 2016.

nations — resolution of issues such as those pertaining to fair wages is critical to the ability of all people to have the opportunities they deserve. (Post ID = 0059)

Finally, results show connections between the topic of environmental sustainability and IC were made by several contributors. For example, Margo Mosher (11 Feb 2016) states:

Our research suggests that integrating sustainability can also lead to greater employee engagement, better decision-making and a more holistic and comprehensive understanding of risks and opportunities. In addition to corporate benefits, bringing sustainability issues into the business model enables a company to contribute to solving today's challenges such as water scarcity, climate change, inequality and under and over nutrition. (Post ID = 0048)

Surprisingly, these results contribute to the academic debate. On the one hand, De Marchi and Grandinetti (2013) suggest that environmental sustainability foster the development of products with features that could lead to superior company performance. On the other hand, Wasiluk (2013, p. 113) states, "there is no guarantee the firm's actions cannot be easily copied by competitors". These findings provide evidence of a more complex picture, where sustainability can stimulate a mutually beneficial development of all IC determinants first, and with sustainability later (Wasiluk, 2013, p. 119). This interaction could be more difficult to copy by competitors or at least could require longer periods providing some "first mover" benefit (Frynas *et al.*, 2006).

These results could be used by future studies with the specific aim of investigating particular practices to develop all the three dimensions of sustainability: Financial, Social and Environmental Sustainability. As Dumay and Garanina (2013) suggest, there is a growing call for academics to get their hands dirty, working in the real world, providing practices useful for practitioners. The development of these new tools such as blogs and social media in general, provide new sources where practitioners and academics could meet to gather ideas, test and develop new theories.

In concluding this chapter, the author wants to say that as any study this research has some limitations and could call for further studies. First, the use of semantic analysis is at the beginning and some problems such as natural language ambiguity could affect the validity of these findings. Second, some statistical limitations such as the existence of outlier could influence the results. All these limitations call for further studies maybe employing more human based techniques such as content analysis and of direct interviews.

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Paper 3

A relational capital perspective on social sustainability. The case of female entrepreneurship in Italy

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Abstract

Female entrepreneurship is considered as a relevant issue to both social and economic sustainability, and it has been part of the political agenda internationally. Public entities should promote entrepreneurship in general, and female entrepreneurship in particular, with dedicated resources and programs. Female entrepreneurs are considered as a key asset in developing economic growth, especially during the financial crisis. However, women experience much more difficulties in opening their own ventures. Relational capital is particularly relevant when it comes to female entrepreneurship. We aim to analyze the factors that seem to affect the opening of new ventures, and the role of relational capital in female entrepreneurship, taking into consideration the Italian context during the financial crisis (years 2011-2012). Our study employs a mixed-method approach analyzing first data from a regional program to enhance the creation of new companies, trying to understand the issues of potential entrepreneurs in general and women in particular. Then, a specific single case is investigated using the CAOS model of micro-entrepreneurship and the network relationship model by Paoloni (2011). The purpose of the study is to contribute to the debate regarding the issues affecting the opening of new companies as well as the link between relational capital and female enterprises.

1. Introduction

The concept of “sustainable development” was introduced for the first time by the World Commission on Environment and Development, known as the “Brundtland Commission” in 1987. The “sustainable development” was defined as the ability of solving the present issues without affecting or compromising the future generations’ ability to solve their own problems (Brundtland Commission, 1987). Within its first development the concept has continued growing and gender equality has become an important topic recognized and promoted by the United Nations. The support for women’s entrepreneurship has been present on the political agenda internationally, and it is considered an issue correlated to both social and economic sustainability (Massaro et al., 2018). The arguments vary, ranging from economic growth and new jobs to human resource utilization to justice and equality. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) adopted by world leaders in 2015 embody a roadmap for progress that is sustainable and leaves no one behind. Achieving gender equality and women’s empowerment is integral to each of the 17 goals, ensuring the rights of women to get justice and inclusion, economies that work for all, and sustaining shared environment now and for future generations (UNWomen, 2018)

Private entrepreneurship has been seen as a relevant tool to promote development and economic growth and an important research area to study gender equality (Lordkipanidze et al., 2005; Robinson, 2006). Several studies underline the importance of public policies in fostering entrepreneurial activities supporting also gender equality (Spiegler and Halberstadt, 2018). The role of female entrepreneurs has been considered particularly relevant in later gender studies (Mustapha and Subramaniam, 2016; Ramadani et al., 2015; Sowmya et al., 2010). However, female entrepreneurs experience more problems than men in pursuing their entrepreneurial journey, at a various level: receiving funding, balancing work and family, getting specific education among others (Halkias et al., 2011; Itani et al., 2011; Jamali, 2009; Mustapha and Subramaniam, 2016; Tambunan, 2009).

Additionally, female and male entrepreneurs have been studied showing different approaches in terms of sustainability. Casimir and Dutilh (Casimir and Dutilh, 2003) have developed a theoretical framework to analyze the major forces that affect the sustainable development and the role of entrepreneurs. They highlight the presence of a masculine element (outgoing) which aims to manifest itself, as well of a feminine element (caring) which seems more concerned about the future. The masculine element is predominant in several societies. Men adopt a dominant leadership style characterized by authoritarianism, with an eagerness for power and status and an orientation towards economic performance (Buil-

Fabregà et al., 2017) so there is the need to enhance the feminine aspect to pursue a sustainable development for the generations to come. In fact, by contrast, women are associated with transformational leadership based on social values, interpersonal relations, welfare and empathy for others (Bird and Brush, 2002; Eagly and Carli, 2007; Galvão et al., 2019; Paoloni and Dumay, 2015; Rudman and Glick, 2001; Tata and Prasad, 2015). Therefore, sustainability is a topic strongly related to the gender equality that policy makers should consider supporting entrepreneurship. At the same time, sustainability is strongly affected by gender issue, with women supporting a caring element more concerned about the future(Casimir and Dutilh, 2003).

Starting from this premise, this paper wants to investigate further the gender difference in opening a new venture, assessing the results of a Regional program of entrepreneurship which took place in Friuli Venezia Giulia, Italy, during the years 2011-2012. A mixed method approach is used to address the research aim. First, a quantitative analysis is used to underlying main differences between male and female new entrepreneurs. Second, a single case study is then analyzed in depth to deepen the results providing some managerial implications.

2. Literature review and research questions

Gender studies had different stages (Casimir and Dutilh, 2003). The first stage arose following the wave of feminism, in the early 1970s, and it can be defined as "liberal individualism." Women were seen less competitive in the labour market due to the role they played in the society compared to men. The idea was to empower them through education, which could lead to better positions in workplaces to reach a "comprehensive female participation" through an "integrationist strategy" (Warren and Bourque, 1991). In the late 1970s, studies were more concentrated on "liberal structuralism." The focus was on the structural and/or environmental elements that effect equality. The idea was to involve policy makers in adopting legislations and rules to better help women to manage both work and family, such as parental leave and flexi-working; and to prevent sexual harassment in the workplace. In the 1980s gender studies started to focus on the pride of the typical female values, which became a source of strength instead of a weakness. The idea was also to connect these values with nature. During the 1990s, the focus was on emphasizing the ongoing social construction of gender relations and other forms of power (Casimir and Dutilh, 2003). Knowledge production was considered as an essential process. The role of the woman as an entrepreneur, being able to affect the economy despite the various issues came afterwards (Bruni et al., 2004; Brush, 2006; Mustapha and Subramaniam, 2016; Ramadani et al., 2015; Sowmya et al., 2010; Terjesen and

Lloyd, 2015), even though their contributions and potentiality is often underestimated. The Organisation for Economic Co-operation and Development (OECD, 2008) once stated: "[i]n failing to make the best use of their female populations, most countries are underinvesting in the human capital needed to assure sustainability. Although women account for over one-half of the potential talent base throughout the world, as a group they have been marginalized and their economic, social and environmental contributions go in large part unrealized."

Economic growth and social change have led to a growing interests in sustainability issues connected to the gender research, in academic as well as economic, commercial and institutional areas (Macke et al., 2018; Spiegler and Halberstadt, 2018). Issues connected to social sustainability (such as social inequality, access to education, ...) and economic sustainability (such as poverty and long-term economic growth) for women have become key topics both for researchers as well as policy makers (Bardy et al., 2015; Bardy and Massaro, 2013; Bocken et al., 2016; Dal Mas, 2018; de Lange, 2017; Massaro et al., 2018). At the same time, public spending has decreased (Garlatti et al., 2014; Massaro et al., 2015), and this makes it difficult to take care of the abovementioned issues in a proper way (Bardy et al., 2015; Fischer et al., 2012; Kickul and Lyons, 2016). However, the role of both public as well as private sector is considered essential in supporting the creation of new business ventures (Massaro et al., 2018). Entrepreneurship is claimed to be an essential element to stimulate growth and development of any country, and female entrepreneurs play a vital role in the economic development and can help to stabilize the economy particularly during the economic recession periods (Musaazi et al., 2015; Mustapha and Subramaniam, 2016; Ramadani et al., 2015; Roy and Lahiri-Roy R., 2010; Sowmya et al., 2010), as they are often seen as "engine change" (Cohen and Huffman, 2007). Entrepreneurship and its required skills have been included in several academic curricula (Lans et al., 2014; Massaro et al., 2014), this means that several countries have emphasized and promoted entrepreneurship to support their economy (Mustapha and Subramaniam, 2016). Several countries have supported and financed entrepreneurship and mentoring programs (Cincera et al., 2018; Price and McMullan, 2012), for instance Malaysia (Mustapha and Subramaniam, 2016), North America and Europe (Braford et al., 2013; Varela-Candamio et al., 2018).

Interestingly, previous studies have analyzed the factors that could impact on new venture success or failure. Within this research field entrepreneurial experience is seen as a paramount variable to take into account since success is favored by strong review and control by the entrepreneur rather than employee initiative (Stuart and Abetti, 1987). Similarly, Barnir (2014) focuses on innovation and

show that pre-venture experience directly affects the extent of innovation in new venture innovation, while Mai and Gu (2012) suggests "that work experience plays an important role in the process of venture gestation". Interestingly, the literature stresses the fact that there are several differences between male and female entrepreneurs. Women tend to use their previous experience compared to men. Male entrepreneurs are more likely to challenge and depart from industry norms, while female entrepreneurs are more likely to engage in routine learning process and in accordance to the norms which helps to enhance their confidence (Ekanem, 2005, 2015). Therefore, while literature shows that previous experience has an important role in new venture opening, differences between male and female entrepreneurs should be taken into account. Thus, we derive our first research question:

RQ1: Is there any difference in the effect of previous experience on new venture opening between male and female entrepreneurs?

Interestingly, beside entrepreneur characteristics, the new venture characteristics such as the target market dynamism and attractiveness has been seen as paramount (Stuart and Abetti, 1987). More recently, Van Gelderen et al. (2005) found that start up capital has an important role in the new venture success. Interestingly while these studies do not distinguish between male and female entrepreneurs, literature shows that female entrepreneurs seem to face more obstacles to start their own venture than men (Halkias et al., 2011; Jamali, 2009). These issues include lower productivity, difficult in finding capital, work-family conflicts, difficulties to assess finance and entrepreneurial education (Itani et al., 2011; Tambunan, 2009). Married female entrepreneurs with children are found to be more difficult to manage their family and business compared to those not married (Winn, 2005). Full family support is often required for female entrepreneurs to become successful in their businesses, due to the fact that women play an important role to both sides; working in their workplace and at home (Alam et al., 2011). Therefore, while literature shows that there is an important role played by the venture complexity, differences between male and female entrepreneurs should be taken into consideration. Thus, we derive our second research question.

RQ2: Is there any difference in the effect of venture complexity on new venture opening between male and female entrepreneurs?

Interestingly, several studies highlight that an important element to support female entrepreneurship is the relational capital within the family and with close friends as well as others to handle new venture complexity (Alam et al., 2011; Brindley, 2005; Dal Mas et al., 2019; Paoloni and Cesaroni, 2016; Paoloni and Demartini, 2012; Paoloni and Dumay, 2015; Paoloni and Lombardi, 2017). Indeed, relational capital as a part of intellectual capital is a vital asset of the contemporary economy for most organizations (Edvinsson and Malone, 1997; Klein, 2009; Stewart, 1997; Subramaniam and Youndt, 2005) and can be defined as the sum of the relations between companies and the external environment and/or with stakeholders (Freeman, 1984; Morais and Silvestre, 2018; R.K. et al., 1997). Starting from the importance of female entrepreneurship for the sustainable development of a country, and the need for the public entities to help the development of new ventures, the purpose of the study is to contribute to the debate investigating further the gender difference in opening a new venture explaining how female entrepreneurs can use their relational capital in the start-up phase. Thus our third research question is:

RQ3. *How relevant is relational capital in running a female business in general and in the start-up phase in particular?*

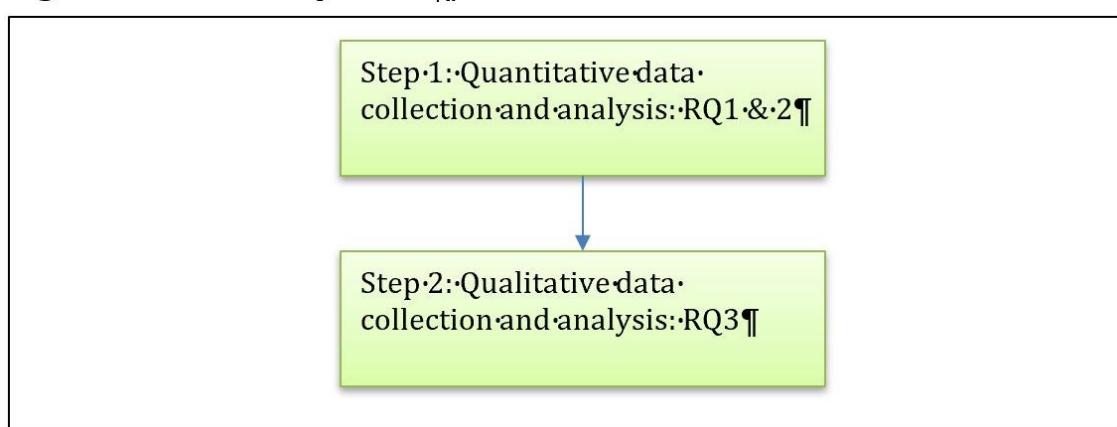
3. Research Context

Our study is conducted in Friuli Venezia Giulia, a region situated in the north-east of Italy in the years 2011-2012, in the middle of the financial crisis. That time was critical for existing companies as well as for start-ups. Female entrepreneurs were in an even more critical situation. In 2010, 133 thousand companies with employees were born. The number decreased by 1.700 units from the previous year. Most of the new businesses were individual firms. The interesting fact is that 71% were driven by male entrepreneurs, and only the remaining 29% by female entrepreneurs. Female business was mainly about commercial activities (almost 40% of the total firms of this sector are run by women) and other services (over 33%) (ISTAT, 2012). In the Region of observation, the situation was critical as well. The number of companies registered at the local chambers of commerce decreased radically in the period 2007-2011, with the only exception of 2010 (Unioncamere Friuli Venezia Giulia, 2012). Female entrepreneurs counted for the 28%, a bit less than the national average. Again, sectors with major female involvements were personal care services (50% of active companies belonging or run by women), hospitality and restaurants (45%) and agriculture (33%) (Unioncamere Friuli Venezia Giulia, 2012).

4. Methodology

Our research uses a mixed method approach. More precisely we carry on our analysis using an explanatory sequential method, that start with a quantitative study and then conduct qualitative research to deeper explain the quantitative results (Creswell, 2014). Figure 1 explains the research context.

Figure 1. Research process



The first step relates to the quantitative analysis. We analyzed structured data collected from a program called “Imprenderò”, financed by the local Government of the Italian Region Friuli Venezia Giulia together with the European Social Fund in the years 2011-2012. The program offered to entrepreneurs-to-be free seminar, classes, mentoring, as well as consultancies, to study their business ideas and develop their business plans. This program is considered relevant since it was developed in Italy during the crisis by the public entity (the Region Friuli Venezia Giulia) to foster entrepreneurial activities, as recommended by the literature to promote social as well as economic sustainability and sustainable development (Braford et al., 2013; Mustapha and Subramaniam, 2016; Price and McMullan, 2012; Robinson, 2006; Spiegler and Halberstadt, 2018). Moreover, it involved an interesting number of people of different gender, age, and education. The business ideas could be fruitfully analyzed since the business plans are complete and filled in the same format. The business plans were developed by the entrepreneurs with the help of external consultants and mentors with different areas of expertise, according to the needs of the idea

(marketing, finance, processes, ...). The quantitative part allows answering RQ1 and RQ2.

Then, in step 2, a single case study of a female entrepreneur belonging to the sample is analyzed more in-depth to answer RQ3, following the framework of a revised version of CAOS model of micro-entrepreneurship (Dal Mas et al., 2019; Paoloni, 2011). We decided to use the CAOS model among others since it allows to map both the characteristics of the entrepreneur as well as the features of the environment, and a specific section of the model is devoted to the sustainability factors of the venture. The following subsections discuss the data collection and analysis of the first two steps.

4.1 Step 1. The quantitative analysis

4.1.1 Data collection and measures employed

We analyzed 418 new business ideas developed within the program through their final documents, which are their business plans. The analysis of the business plans allowed us to gather data about the main features of the entrepreneurial initiative (sector, expected revenues, investments and costs, etc.). A questionnaire followed up all 418 participants by asking them further information about the characteristics of the entrepreneurs like gender, age, previous working condition (employed, unemployed, etc.). More precisely, to answer our research questions we collected the following data:

Experience: Two measures were used to address previous experience. First, we asked if the person interviewed had previous working experience in the same sector. Additionally, we asked about previous employment condition distinguishing between employed persons, unemployed people for less than 1 year and unemployed people for more than 1 year.

Venture complexity. To measure_venture complexity, we used two measures. On one hand we asked the required investment to start the business. Bigger investments require higher managerial complexity (BarNir, 2014). Additionally, we asked how many people the project was supposed to employe.

Control variable. As_a control_variable we_focus_on the age of the person interviewed. Previous studies have been shown that entrepreneur age can affect the new venture opening (Van Gelderen et al., 2005).

Our research uses data collected in the northeast of Italy. More precisely, the local Government of Friuli Venezia Giulia together with the European Social Fund financed a program to offer specific courses about start-ups plus free consultancies to develop the business plan of the venture to any potential entrepreneur. To be admitted to the program, people needed to explain their

business idea to a commission that first evaluated the rough feasibility of it. The program led to the development of 418 complete business plans. A specific email was sent to each participant to invite him/her to take part in this study. All participants accepted. Additionally, we asked them to fill out a questionnaire with specific questions. After one year we reconnected with the person asking them if they had started the new venture. Table 2 depicts the specific questionnaire.

Table 2. Questionnaire

Please answer the following questions	Answers
Have you started the new venture	Yes No
(If yes) do you have any previous experience in the same sector	Yes No
What is your gender	Male Female
What is your age	
What is your previous employment condition	Employed Unemployed for less than 1 year Unemployed for more than 1 year
How much is the investment required to start your business	
How many people will the business employee during the first year	

4.1.1 Data analysis

To analyze our dataset, we employed a logistic regression. New venture opening is the dependent variable, while Previous experience, Age of the entrepreneur, Previous occupancy: Unemployed < 1, Previous occupancy: Unemployed > 1, Investment required, and People employed are the dependent variables.

4.2 Step 2. The qualitative analysis

After the quantitative analysis, we employed a case study approach (Yin, 2009). The adopted framework is a revised version of the CAOS model of micro-entrepreneurship (Paoloni, 2011), applied to the case of Anita B., who took part in the Imprenderò program to open her shop. Using the CAOS framework, we analyze the personal characteristics of the female entrepreneur (C); the ambience or environment in which the micro-enterprise operates (A); the organizational and managerial aspects (O); and the sustainability factors (S). The model is enriched by taking into consideration the results of our analysis of Imprenderò's business plans as described above to answer to RQ2.

Figure 1. The CAOS Rectangle

<i>Personal characteristics of the female entrepreneur (C)</i>	<i>The ambience/environment in which the micro-enterprise operates (A)</i>
<i>Organizational and managerial aspects (O)</i>	<i>Sustainability (S)</i>

Analyzing the relational capital of the female venture, we provide an interpretive framework to investigate whether and how the use of it enables female entrepreneurs in leading their business successfully. More in detail, we analyze the following elements of the CAOS model applied to the case study of Anita.

Personal characteristics of the female entrepreneur (C)

It defines the distinguishing factors of each eventual entrepreneur affecting the role played by female entrepreneur within its firm and her capability to build networks and take advantages from them. These elements are relevant to the dimension:

- personal information of the entrepreneur (complete name, age, education, previous experience);
- micro-enterprise information (denomination, legal form, size, location);
- motivation supporting the business;
- business vision;
- governance;
- role of the female entrepreneur within the firm;
- decision-making process.

The ambience/environment in which the micro-enterprise operates (A)

The environment of the micro-enterprise (A) explains the socio-economic-cultural context in which the company is located. The environment can influence the eventual connections that a company can create interacting with its stakeholders. The environment also impacts on the relationships coming from social media tools.

Organizational and managerial aspects (O)

Organizational and managerial aspects are connected to women entrepreneur's goals, tasks, and responsibilities within the organization; The dimension includes the following actions:

- roles assignment;
- responsibility identification;
- operative and management procedures to define who does what.

Sustainability factors (S)

This dimension, modified from its initial version, aims to maps the impact of sustainability factors within the company. There are "no right or wrong definitions" of sustainability (Isaksson and Steimle, 2009), but the most common definition of sustainability defines it as the sum of three main pillars: economic, social and environmental sustainability (Wasiluk, 2013). This dimension maps the eventual presence of sustainability factors within the organization.

In addition to the CAOS model, the relational capital of the female entrepreneur is mapped using the model of Paoloni's matrix (Paoloni, 2011), which defines network relations. The matrix combination is composed of the intensity of the relation variable - durable or temporary - and the kind of relation variable - formal or informal. Thus, the model identifies following network relations that can change during the firm life cycle: relations A - formal and durable; relations B - formal and temporary; relations C – informal and durable; relations D - informal and temporary.

Table 4 – Network Relations Framework

Formal (A)	1	2
Informal (B)	3	4
Durable (C)		Temporary (D)

5. Results of the step 1. Answering RQ 1 and RQ 2

Analyzing the results, we verified that 61% of the people involved started their businesses. Interesting, only 44% of the persons taking part in the program had previous experience in the same sector/industry of the new venture. The average age of new entrepreneurs is 37 years, with a minimum of 20 and a maximum of 68. Interesting, 56% of the persons in the sample was employed at the time of the questionnaire, while 32% was unemployed by less than one year and 12% was unemployed for more than one year. The average number of people employed in the project for the first year is 0.7 with a minimum of 0 and a maximum of 10.

Interesting, 196 business plans were developed by women, and the remaining ones by men. The primary aim of this study is to understand the differences among male and female entrepreneurs. To do so, we performed a logistic regression among the two groups of individuals, and then we compared the results.

Focusing on the different role of gender to enhance the effectiveness of the program, we performed a logistic regression. More precisely, we tested the effect of some characteristics of the entrepreneur like age and previous experience in the same sector, as well as some features of the new venture like the investment required and the number of people employed, to see how these elements affected the probability of starting the new venture.

Table 3. Logistic regression

Variables	Male	Female
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	Coeff	P-value	Coeff	P-value	.
Constant	0.975	0.156	1.528	0.066	.
Previous experience	0.045	0.894	0.582	0.129	
Age of the entrepreneur	0.004	0.783	-	0.007	0.712
Previous occupancy: Unemployed < 1	-0.39	0.31	-0.34	0.36	
Previous occupancy: Unemployed > 1	-0.298	0.529	-1.318	0.02	*
Investment required	0.163	0.021	*	0.149	0.089
People employed	0.072	0.399	-	0.281	0.021

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Results clearly show how female entrepreneurs are much more influenced by their previous job condition compared to men. More precisely, women that have been outside of the labor market for a long time have much more difficulties to enter it again. Interestingly, there is a significant impact regarding the complexity of the investment based both on the number of people employed and the initial amount of money required. These elements strongly affect the possibility of launching the business initiative. While the initial amount of money could be explained both considering the higher risk of the venture and the stronger difficulties in finding funds, the number of people employed seems much more connected with a psychological perception of the complexity of the initiative.

The results clearly show how women have much more difficulties in starting new ventures if their employment condition finds an extended period of inactivity. Additionally, women are much more sensitive to the complexity of the initiative compared to male entrepreneurs. Interesting, previous experience is not a limit both for female or male entrepreneurs since results show that there is not a statistically significant relationship.

Relational capital appears to be particularly crucial for female entrepreneurs, since they experience troubles in re-entering the labor market once they have been outside of it for a long time. Women entrepreneurs do not fear the fact of working in different sector than before, but, as the literature confirms, they are sensitive to the complexity of the initiative.

6. Results of the step 2. Answering RQ 3

Moving from the results of RQ 1 and 2, the case study of Anita B. was selected to answer RQ3. As previously described the case is analyzed through the application of the Paoloni's framework of CAOS and network relations model (Paoloni, 2011).

The personal characteristics of the female entrepreneur (C)

Anita spent most of her working life as a kindergarten teacher, taking care of toddlers. Being her school an employee-owned organization, she was also one of the many co-owners and a member of the executive committee, with managing as well as organizational duties. She was devoted to her job, and especially to her role of educator, and she tried to enhance the creativity and self-expression skills of her little students. Creative recycling and environmental protections were among her top values. She resigned with the idea of creating her own business to pursue her beliefs independently, always in the field of children education. She joined the Imprenderò program to study in depth the feasibility of the venture. After several evaluations, she decided to change her business idea to open a lab/(work)shop where she could sell local artisans' pieces as well as organize workshops for children and adults on creative recycling and art. At first, she decided she would run her shop alone, being the solo owner as well as manager and decision maker.

Analyzing Anita's experience in the light of the general results of Imprenderò, we can confirm what comes out from the sample. She claimed: "*When I resigned, I immediately started thinking about the next step. I started dreaming about my own company even before quitting my previous job. Costs and a high initial investment scared me, that is why I tried to reduce them by choosing a location with lower rent and deciding not to hire anybody. My previous experience was yes relevant, but this is mainly because I love what I do, and this is important to me. But my previous job was about taking care of young children, now I need to deal with a variety of clients, suppliers and different stakeholders like other entrepreneurs from my town or employees of the chamber of commerce... It is completely a different story now! I was not scared of changing the kind of activity, indeed, I found it very exciting! And I knew I could count on my family, my husband, my parents, my brother and my sister-in-law (who took also part in the*

program), my sister, and all my past colleagues and the parents of my former little students."

The ambience/environment in which the micro-enterprise operates (A)

Anita decided to open her (work)shop in her hometown. The location was a key issue as well as one of the most relevant costs concerning rent. She then chose a site just outside the city center so that she could save some money monthly. After some years, Anita stated "*I am still not sure whether I made the right decision. The monthly rent bill scared me so much that I did not think about the extra revenues I could get by being more visible. Even my hometown itself could not be the right choice. A bigger city or a popular shopping mall could have helped to reach more potential clients. Being recognized and known by the people of your town is an asset, however, this does not mean that they will be interested in my initiatives or in the kind of goods I sell.*" Anita benefited from the regional program in a very positive way. The excellent business plan developed together with the external consultants helped her to receive some funds from the Regional Government within the framework to sustain the female entrepreneurship. She also won a monetary award devoted to female entrepreneurs from a private foundation thanks to her innovative business idea. She was also chosen among the "ambassadors" of the program, and she was appointed as a keynote speaker at seminars and presentations. The local press reported her venture and talked about her case. Her visibility helped her to get in touch with the first suppliers and clients. A well-defined social media strategy made the rest. She stated: "*I will be forever grateful to Imprenderò. The business classes and the help of external consults were so relevant to me. I was so much in love with my initial idea that I could not see its weaknesses, nor I could estimate the potential numbers. Dealing with professionals helped me to define a stronger concept. I was glad to share my experience with the other potential entrepreneurs too. Being a woman and a mother made it even more special. I was able to succeed despite all difficulties, and I wanted to encourage more women to pursue their dreams. This is something very important to me.*"

The organizational and managerial aspects (O)

As stated above, Anita decided to start her business alone. Being a solo entrepreneur allowed her to choose how to run her shop, what kind of products to offer, what kind of classes or workshops to organize, when, and how. Sometimes, she enjoyed the help of her sister or other collaborators (mainly, artists and artisans already cooperating with her, or lecturers/teachers involved in the courses). She stated "*Being alone is sometimes though, but still, this is how I like it! Instead of hiring a coworker or selling part of my company to a possible partner, I would replicate my shop in a franchising formula instead. It*

was hard at the beginning, but now I am delighted with what I do, and I guess my business idea would work elsewhere, especially, as I said, in a bigger city or a crowded place like a shopping mall."

The sustainability factors (S)

The primary motivations of Anita derived from the need for self-realization. From her previous experience, she wanted to design her venture lead by her values: environmental and social sustainability through recycling, creativity, and continuous learning. Being the mother of a five-year-old girl, she wanted to be independent and be able to bring her kid to work with her, in a cozy but also vibrant and colorful environment, making her working life as flexible and pleasant as possible. Her wellbeing mixed her family needs with her empowerment as an entrepreneur. The financial and economic dimensions were not too critical to her. She claimed: "*What I want is just to gain a regular salary, like the one I had before as an employee. I am not looking for extra money. I want to enjoy myself, to build something to be proud of, and to look after my daughter in the meantime. I do believe that it is our duty, as good citizens and entrepreneurs, to promote sustainable development. I do believe that we must leave a better world for our children. All the goods that I sell can be defined as sustainable. Most of them come from recycled materials, and almost all of them are produced by local artisans, following a "0 KM approach. I always welcome products created by people with disabilities, single mothers living in protected communities and so on. Beside what I sell, I think it is important to promote sustainable development and the importance of preserving the environment.*" However, during the program, she could learn and study the financial dimension as well. She stated "*I was and still am scared of costs. However, the business model I have chosen allows me to pay my suppliers only when I sell their products, and I get the money from my customers. The rent is affordable. I am the only employee of my firm. The co-funding of my Regional Government was also precious to help me cover part of the initial investment.*"

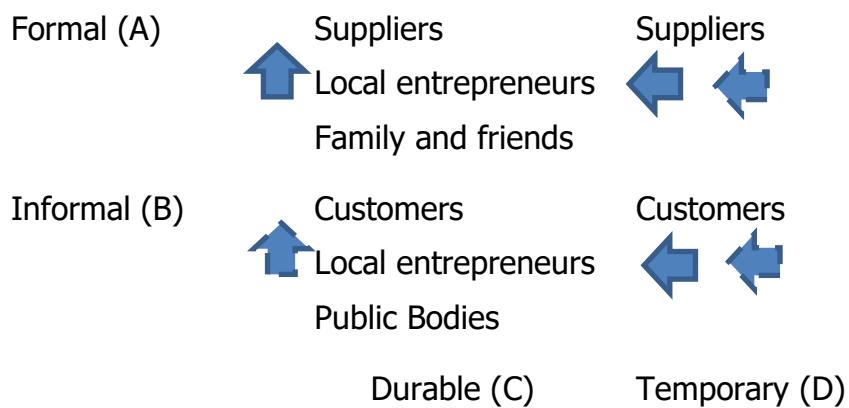
The analysis of relational capital in the start-up phase

According to the Paoloni's matrix of relations, Anita's network of relationships varies. More in details, among the most relevant relationships, we can mention those with suppliers: local artists and artisans that chose Anita's shop as selling outlet. Having a formal and stable relationship with a good number of suppliers helped Anita to increase the quality and quantity of goods to be sold. The relationship with customers is also relevant, and it can be defined as informal but durable. One of the goals of Anita was to transform temporary relationships into stable ones. Social networks, newsletter, and the blog are among the tools to keep in touch with clients and share with them the launch of new classes, workshops, ... Word of mouth was also important to gather new customers, especially during the first months of activity. Most people could not but be positively affected by Anita's enthusiasm and strong beliefs. Anita tried also to build formal and stable relationships with the other entrepreneurs of the town, especially those running shops. She took part in the local committee that organizes city festivals and special events to gather people and tourists, and to enhance the business. An informal but permanent relationship with the employees of governmental offices, chamber of commerce, as well as corporations related to trade and commercial activities, was also relevant for Anita to be updated with the most recent regulations, laws, and funding opportunities for start-ups and female entrepreneurs.

Last but not least, Anita enjoyed the full support of her family and friends. She stated: *"I could never do it without the full support of my husband, my parents, my brother and sister and their families, and my best friends. Everyone was so supportive, and ready to cheer me up every time things became though. They were proud of me and of my initiative, and this meant the world to me. The genuine enthusiasm of my 5-year-old helped a lot too. One day, I will tell her how important she was for me to reach my professional goals."*

The analysis allows us to answer RQ3 by highlighting the importance of relational capital in general and in the start-up phase in particular.

Table 5 – Network Relations of Anita’s case study



6. Discussion and conclusion

Private entrepreneurship is seen as a key element to promote economic growth and to enhance sustainability. Women entrepreneurship is considered even more important. Indeed, it can foster both social as well as economic sustainability, and literature confirms that women are more caring about sustainable development. The public sector should foster the creation of new business ventures by promoting dedicating programs as well as specific funds. There seem to be still more difficulties for women to open their own ventures compared to men. Key issues concern the previous experience, the complexity of the business, and the relations both with family members as well as with external parties.

Becoming a female entrepreneur in Italy at the time of the crisis is not easy, as the results of the Regional program Imprenderò state, confirming all results of the literature. More in details, our analysis clearly shows how women seem to face much more difficulties in starting new ventures concerning the experience, if their employment condition finds an extended period of inactivity. Additionally, potential female entrepreneurs seem much more sensitive to the complexity of the initiative, concerning the initial investment and the number of employees needed, compared to men. In fact, these factors prevented women to open their ventures despite the good results forecast in their business plans. This should lead to dedicated policies devoted to women entrepreneurs, in terms of promoting jobs and vacancies not to let them unemployed for a long time, as well as dedicate funds, credit lines, and guarantees to support the creation of new ventures.

The case of Anita B., who opened her shop after developing her business plan within the program, confirms the results of Imprenderò project and highlights the importance of relational capital in dealing with the start-up phase. The CAOS model, as well as the network relations model, helped to detect the significance of networks and relationships in the start-up phase. The new entrepreneur identified the importance of the relations with her family and friends, who supported the initiative, with the people she got in touch during her previous work experience, with the clients and suppliers of her network as well with the other entrepreneurs of the city and the local chamber of commerce.

Anita highlighted the importance of the support given by the Regional Government through the mentorship program, and the dedicated funds she received to cover part of the initial investments. The initiative financed by the Region allowed Anita to take part in entrepreneurial classes dealing with a variety of topics: from accounting to taxation, from marketing to financial planning. The external consultants helped her to design the details of her business idea, defining the mission and the vision, the marketing strategy, the investment needed, and the potential financial outcomes. The Regional funding program devoted to female entrepreneurs then helped Anita in co-financing the opening of the shop, reducing so the complexity of the initiative. Anita decided not to hire anybody at the beginning of her entrepreneurial journey, to have a lighter cost structure.

The case study also confirms the fact that women seem more sensitive towards the importance of pursuing a sustainable development for the generations to come. Despite being a profit activity, Anita's initiative was 100% devoted to promoting environmental and social sustainability.

The research has several limitations. First of all, data are gathered from only one program, carried on in a specific and small Region of Italy. Then, it should be clarified how much the historical context (financial crisis in the years 2011-2012) could influence our results. The same methodology and questionnaire should be replicated in other geographical as well as historical contexts to further validate the results.

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