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Review

Exploring the connection between relational capital and female entrepreneurs

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Among intangible assets of contemporary companies, relational capital (RC) is a relevant strategic asset as well as a dimension of intellectual capital. In this scenario, micro-enterprises are key drivers of economic growth, and woman entrepreneurs are key developers of these businesses. So, the purpose of this study is to carry out a literature review analyzing how RC contributes to the startup phase of women-owned micro-enterprises. Another purpose is to understand whether and to what extent the studies conducted so far have addressed some issues such as “How and why women entrepreneurs use relational capital? What are the main benefits they get using relational capital? What are the main obstacles they face?” A literature search on Scopus was conducted, using a set of selected keywords. Scopus was used since it has quality publications. Selected papers were analyzed and classified, in an attempt to identify the main topics and results obtained from the research and analysis carried out so far. The contribution of the present research is to make the international literature focus on the connection between gender studies and RC. Particularly, the literature review emphasizes the topic proposed as emerging issue, which gives us the opportunity to identify new trends and future directions of research. This paper aims to advance knowledge and practice in the area of gender and management, using RC based on empirical research, theoretical developments, practice and current issues. The main evidences are related to a better understanding of the debate on gender and relational capital, considering that female entrepreneurship is central to the development and welfare of economies. Deep knowledge on how women entrepreneurs manage business relation can contribute to improving the effectiveness policies that promote the participation of female entrepreneurs in the economy.

Key words: Relational capital, women entrepreneur, women manager, women-owned micro-enterprise, gender studies.

INTRODUCTION

In defining knowledge economy, relational capital (RC) (Edvinsson and Malone, 1997; Klein, 2009; Stewart,

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1997; Subramaniam and Youndt, 2005; Sullivan, 2000) is a significant intangible asset of contemporary companies.

RC is the amount of relations between companies and the external environment and/or with stakeholders (Freeman, 1984; Mitchell et al., 1997) such as clients, suppliers, employees, banks, universities, public organizations and so on. In other words, RC is the brand, image, reputation, satisfaction and loyalty marketing that companies have in their relationship with stakeholders (Donaldson and Preston, 1995; Friedman and Miles, 2006).

Companies create value through RC and intellectual capital in which it is included (Bontis, 2001; Cuzzo et al., 2017; Lombardi and Dumay, 2017). Relationships between companies and the environment are a way of growing up and, at the same time, a chance to create added value in the long term and increase cash flow and stock of resources. In this way, RC represents:

1. A key source for companies and female entrepreneurs
2. A key factor to gain competitive advantage in the market
3. A supporter of the training and transfer of collective knowledge.

In the last twenty years, the presence of female companies has continued to increase in the company system. Direct undertaking of the role of an entrepreneur (Buluku et al., 2016; Mwatsika, 2015) is a trend that has involved Western countries as well as developing countries, acquiring greater relevance. For example, in China and Europe, they represent one quarter of the entire entrepreneurial scenario.

On one hand, there is the need to investigate the reasons and methods with which women want to start up a company; on the other hand, there is the investigation on the specific characteristics of female companies, moving from a gender perspective (Poli, 2017) to a social perspective. The aim is to analyze their behaviour, highlight the existence of a typical profile of female entrepreneurs independently, and not contrasting to men.

The vision of a female company with great relevance is attributed to the human factor and a lot of space is left to relations, through a management style of participation and cooperation (Migale, 1996). The network of formal and informal contacts in which the family is an integral part (Paoloni, 2011) affects the environment and the market within which the company is represented. For female entrepreneurs, it is the main lever through which obstacles can be overcome during the various phases of the company's life. The relation value that brings about trust, knowledge and skills (Bruni et al., 2000), and activates a relational circuit that can improve performance generates RC and increases companies' value (Paoloni and Dumay, 2015).

However, there is very little empirical research on relations in this context. Carsrud et al. (1986) and

Rodriguez and Santos (2009) highlighted the differences existing between relations created by female entrepreneurs (Buttner, 2001; Sarri and Trihopoulou, 2005) and the ones built by male entrepreneurs. Authors highlight that the networks created by women consist of a larger number of women compared to men and tend to be of smaller dimensions. The common agreement (Gillian, 1982; Shapero and Sokol, 1982) is that in female companies, they work constantly, have connections and networks instead of carrying out an atomistic management, a kind of management typical of male companies, predisposed to cause a separation between the family, society, and working sphere.

The idea of network for women is the creation of a connection between work, family and the community that often coincides with the reason to start up a company. Women's motivation to create a company (McClelland et al. 2005) does not have a unit identity as the desire to start up a company (Caputo et al., 2016) derived by personal and professional experience, attitudes, resources used, different and discontinuous academic and work experience; but, most of all, the main idea is to reconcile work and family. Female entrepreneurs tend to create a company network (Trequattrini et al., 2012; Lombardi, 2015) consisting of very few individuals and preferably women (Smeltzer and Fann, 1989; Lerner and Almor, 2002).

The purpose of the study is to carry out a literature review defining how RC contributes to the startup phase of women-owned micro-enterprises. The second purpose is to understand whether and to what extent the studies conducted so far have addressed the following issues:

- RQ1. What is the trend in the studies developed on relational capital of women entrepreneurs?
- RQ2. How and why women entrepreneurs use relational capital?
- RQ3. What are the main benefits they get using relational capital?
- RQ4. What are the main obstacles?

This research contributes to increase international literature on connection between gender studies and RC. The literature review proposed emphasizes the topic analyzed as emerging issue, which gives us the opportunity to define new trends and future research directions. The aim of this research is to advance knowledge and practice in the area of gender and management using RC by focusing on empirical research, theoretical developments, practice and current issues. The research findings show there is a better understanding of the debate on gender and RC as female entrepreneurship is central for the development and welfare of economies, and the deepening of knowledge of how women entrepreneurs manage the relation of their business. This can contribute to improving the effectiveness policies aimed at promoting the

participation of female entrepreneurs in the economy.

LITERATURE REVIEW

The literature review on women enterprises

The group of papers on "Women enterprises" is 12 (Table 8) referring to issues connected to women entrepreneurs such as business enterprise, support and development, women's empowerment, education and training, entrepreneurialism, strategic change, and start up.

In the light of the purpose of this study, we noted that 3 articles investigated the topic of education and training. The first paper by Price and McMullan (2012) defines the role of mentoring in the wider enterprise eco-system, by focusing on the potential of on-line mentoring for women's enterprise. The second study by O'Carroll and Millne (2010) investigates the work of the Women's International Centre for Economic Development (WICED), showing that the rates of self-employment, business ownership and economic participation can be transformed.

Moreover, interesting insights can be found in the third study by Roomi and Harrison (2010) that has 5 citations. It presents an analysis directed to understanding the gender challenges of Pakistani women entrepreneurs; it reviews several theoretical contexts directed to women entrepreneurs living in an Islamic society and to policy makers. The working propositions of the paper are:

"Women in Islamic Pakistan have difficulty in becoming entrepreneurs. These barriers can be reduced by women having entrepreneurial competences" (Roomi and Harrison, 2010).

The findings of the study declare that the barriers perceived by women entrepreneurs in Islamic Pakistan can be alleviated through women indulging in training that will increase their capital and competences.

Carter et al. (2015) analyze the enterprise diversity in the context of ethnic minorities and women in enterprise. Braidford et al. (2013) contribute to the gender mainstreaming debate, and investigate the support measures in the USA, Canada and Sweden directed to encouraging women to start a business, analyzing the role of women's business centres.

Torri (2012) explored the topic, gender empowerment; he analyzed the impact of women enterprises in the traditional herbal sector in Indonesia through household revenues and social status. Brierton and Bennett (2012) investigate the origins of the Women's Enterprise Policy Group in the UK, showing the need for a historical context for policy development.

Brush et al. (2012) propose the analysis of the inaugural Webinar Session of the Women's Enterprise Committee (WEC), International Council for Small

Business (ICSB). Waring and Brierton (2011) define the impact of women's enterprise on Scotland's economy, and propose a policy for the Scottish Government related to increasing women's business ownership.

Weeks et al. (2011) propose the history of the International Council for Small Business, International Journal of Gender and Entrepreneurship, and National Women's Business Council Best Paper Award for Women's Enterprise Development. The book by Nilsson (2010) titled "Constructing p(e)ace-makers for women's enterprise" talks about the embassy of Women's Enterprise. Roy and Lahiri-Roy (2010) propose the analysis of an Indian women's organization (Lijjat), representing both women's empowerment and a successful business enterprise; they propose solutions in the third and fourth world context to fight poverty and restore dignity.

The literature review on relational capital

The group of papers on "relational capital" is 12 (Table 8) referring to relational and intellectual capital, customer relationship, consumer behavior, Business to Business (B2B), Business to Consumer (B2C), entrepreneurship, new venture formation, building family networks, knowledge management, relationship promoter, and new business start-ups.

However, interesting insights can be found in four papers with 5 or more citations. Sussan (2012) investigates customer-to-customer (C2) interaction as a sub-component of relational capital by explaining the connection with business-to-customer relational capital:

"The results support the hypotheses that C2C interaction (user messages on Yahoo movie message board) adds more explanation to movie sales than B2C interaction (advertising budget) alone, and that there is an inverse relationship between the impact of a firm's B2C interaction and C2C interaction on a firm's sales performance, with the former diminishing over time and the latter increasing over time".

Hormiga et al. (2011) present an analysis of 130 firms to investigate relational capital in new business start-ups with the aim to discuss the impact of intangible relational assets on the success of new business start-ups. Delgado-Verde et al. (2011) investigate, through the utilization of questionnaire answered by 251 Spanish high and medium-high tech firms, relations-based knowledge by distinguishing social capital and relational capital.

Moreover, the authors aim to analyze the effect of both relations-based intellectual capital components on the development of innovation by firms. Dicu et al. (2011) investigate relational capital of pharmaceutical companies (Hoffmann-La Roche, GlaxoSmithKline, Zentiva, Pfizer, Sanofi-Aventis, Novartis, and Servier) through a timely

analysis of seven multinational companies, interpreting their reports and results from Romania's emerging economy.

Hosseini and Owlia (2016) propose a model to assess relational capital in banks introducing measurement indicators on the Ansar Bank in Iran. The result of this study is based on a set of indicators measuring RC to help bank managers to compare relational capital of banks. Delgado-Verde et al. (2014) present a model analyzing four vertical collaboration supplier and customer relationship effects on product innovation. Ghane and Akhavan (2014) introduce a framework to determine relational capitals within service and non-service industries in Iran by administering a questionnaire to 243 business managers.

Gately and Cunningham (2014) investigate how incubated technology entrepreneurs can build relational capital directed to the new venture formation in the social context of a higher education institution. The study recognizes four types of relational capital. Sharma et al. (2012) investigate the implementation of "corporate social responsibility (CSR)" initiatives in family businesses, proposing two cases of Asian family business across emerging economies - Indonesia and India. Pérez-Astray and Babío (2011) analyze relationship promoter in terms of professional profile as catalyst for university/industry relations at transregional and transnational level, introducing strengths and weaknesses of university/industry exchange.

Zaragoza-Sáez and Claver-Corté (2011) analyze activities belonging to relational capital of six multinationals through a qualitative research based on a multiple case-study. Authors propose through this analysis relational activities that facilitate knowledge flows between units of a multinational. Peng et al. (2011) analyze the input resources and transformation in a dyadic inter-firm partnership through a multiple case study approach. They did interviews in three inter-firm cooperative cases, applying intellectual capital navigator (ICN).

The literature review on other Scopus results in 2017

In the last group "other papers and book chapters", 55 scientific documents were extracted. As usual, to focus the study analysis on the most relevant academic contributions to the topic, we focused only on the papers (and not book chapters) that had gained three or more citations. As a whole, the result was equal to 21 papers. They generally refer to issues connected to female entrepreneurship, immigrant female entrepreneurship, female tech-entrepreneurs, gender discrimination and female migrant entrepreneurs.

Terjesen et al. (2016) propose a definition of entrepreneurship policy. They conduct an empirical research and compare male and female entrepreneurs,

providing generalizations and implications. Bamiatzi et al. (2015) analyze the role of competencies contributing to the woman leadership model through a case study. The authors find the relevant leadership model (transformational leadership) based on human, and personal entrepreneurial competencies.

Rey-Martí et al. (2015) investigate, through a qualitative comparative analysis, the motivations of women entrepreneurs and their influence on business survival. Jabeen et al. (2015) propose the analysis of motivation and success factors of female entrepreneurs in Emirati country; they discover also the relevance of family support and contribution of family members.

Welsh et al. (2014) study the Korean female entrepreneurs, investigating how family moral support and personal problems influence firms' performance. Jaafar et al. (2014) analyze the determinations of female entrepreneurs in Malaysia referring to the construction industry and its characteristics. Authors used the Bem Sex-Role Inventory and showed results on the basis of few responses from the analysis conducted.

Mahmood et al. (2014) propose an exploratory study based on the analysis of the microfinance loans impact on poverty reduction in Pakistan amongst women entrepreneurs. It showed the relevance of finance for business success. Powell et al. (2013) present a research based on 253 surveys focusing on the relationship between experiences in family domain and business domain comparing women and men entrepreneurs.

Marlow and McAdam (2013) analyze gender and entrepreneurship using the under-performance hypothesis in the case of women companies; however "it is argued that gendered socio-economic positioning ensures that women-owned businesses demonstrate constrained performance but this is not synonymous with under-performance". Lankina and Getachew (2013) studied the competitive religious entrepreneurs, analyzing the influence of protestant missionaries on male-female educational inequalities perspective in colonial and post-colonial periods in India.

Markantoni and Van Hoven (2012) investigate non-farm women and their side activities in Veenkoloniën mainly exploring factors enabling women to start a side activity in rural households. Patterson et al. (2012) investigate female entrepreneurship, women in management and leadership fields to describe the emerging entrepreneurial leadership theory.

Kwong et al. (2012) analyze the connection between obtaining finance and being female, verifying if there are some barriers to starting a business. Bardasi et al. (2011) investigate performance of female entrepreneurs in three regions-Eastern Europe and Central Asia, Latin America, and Sub-Saharan Africa, discovering among other results the existence of gender gaps between male- and female-owned companies based on firm size perspective.

Hampton et al. (2011) study the dynamics and quality of female high-technology entrepreneurs' networks

referring to the value of female networks. Fielden and Hunt (2011) explore online coaching and women's experiences in accessing social support in the light of a company's creation discovering "...an online relationship with a dedicated coach of the same gender could provide the required support in terms of quantity and quality in respect of all functional aspects of social support".

Wood and Davidson (2011) analyze the Australian indigenous entrepreneurs under the male and female perspectives providing a literature on characteristics, motivations and potential barriers to entrepreneurial activity. Pardo-del-Val (2010) proposes a literature review and a Delphi study from 25 technicians on services which sustain female entrepreneurs.

Ettl and Welter (2010) investigate through a theoretical and empirical analysis of female entrepreneur's knowledge, and their learning modality and characteristics. Mordi et al. (2010) propose the challenges facing female Nigerian entrepreneurs during the business development phase. Collins and Low (2010) explore female immigrant Asian entrepreneurs in Australia by recognizing their characteristics.

METHODOLOGY

Starting from drawing a literature review about RC and female entrepreneurship, we searched for relevant academic contributions in the Scopus database (www.scopus.com) as bibliographic database containing abstracts and citations for academic journal articles.

Answering RQ1, the first phase of the study research involves the selection of key words using the Scopus searching engine. In this perspective, we mainly combined the following words:

1. Intellectual capital
2. Relational capital
3. Woman enterprises
4. Women
5. Enterprises.

Based on the definition of the subject area, the study limited its search to the Scopus Social Sciences and Humanities database which covers more than 5,300 titles. The study analysis is derived from papers published since 2010 to 2017 because we retain this period as relevant, ensuring the analysis of the most recent studies. It is long enough to assist in the identification of emerging research trends in the field of RC and women entrepreneurship from an accounting, business and management perspective. However, relevant literature was found before 2010 with other perspectives of analysis. In this scenario, we cite the following study:

1. Jamali (2009) analysis on the interplay of constraints

and opportunities of female entrepreneurship in developing countries, providing a full account of opportunities and constraints linked to a holistic interdependent system;

2. Brunetto and Farr-Wharton (2007) work that focuses on the impact of trust and trust agents on small and medium-sized enterprises (SMEs) ability to obtain benefits from networking;

3. Yetim (2008) analysis on the definition of female entrepreneurship derived from entrepreneurial personality characteristics, the properties of sociocultural entrepreneurship and gender roles.

The framework used to analyze the papers is connected to research questions, particularly RQ1; and therefore, the content of the papers was examined and discussed, addressing both how and why women create a business and RC.

The framework is found on the matrix of relations (Table 1) identifying four types of company network relations. Along the x-axis, this matrix indicates the intensity of the relation variable (permanent or temporary), and on the y-axis, it indicates the type of relation variable (formal or informal) (Paoloni, 2011).

The matrix highlights the existence of four possible models of network relations according to the use of formal or informal relations, on a temporary or permanent basis:

1. Model 1: it uses relations of a formal nature in a permanent manner
2. Model 2: it uses relations of a formal nature in a temporary manner
3. Model 3: it uses relations of an informal nature in a permanent manner
4. Model 4: it uses relations of an informal nature in a temporary manner.

The network prototypes used may change during the company life cycle, varying and adapting to the moment or period that the company is going through. Moreover, the presence and use of different kinds is characterized by the dimension and/or by the legal form of the company. For example, a large company classified as a company with share capital will mainly have a 1 or 4 model network due to its numerous legal obligations. A smaller company, however, whose legal form is a partnership or an individual company, where the willful power lies in the hands of the entrepreneur/owner, will have a natural trend to use the 2 or 3 model network, which is much more efficient and easier to handle, according to the specific type of management.

Later, we explain how we created the paper dataset with reference to the number of articles, type of journals, and nationality of the authors. We used search terms to find article title, abstract or key words of different document types (articles, books or book chapters),

Table 1. Company network relations matrix.

Variable	Permanent	Temporary
Formal	1	2
Informal	3	4

Table 2. The dataset of selected documents in November 15th 2016.

Papers keywords	2010-November 15th 2016
“Intellectual capital” and “relational capital”	175
“Relational capital” and “enterprises”	59
“Relational capital”, women” and “enterprises”	1
“Women enterprises”	17

Table 3. The dataset of selected documents on May 30th 2017.

Other Scopus search results	2010-May 30th 2017
“Other papers and book chapters”	55

published from 2010 till date in the Scopus Social Sciences and Humanities database. The steps of such research were conducted on November 15th 2016 and May 30th 2017.

First, in November 15th 2016, we found 175 papers of very heterogeneous content by searching the terms “intellectual capital” and “relational capital”. Second, we found 59 papers by searching the terms “relational capital” and “enterprises”. Third, we found 1 paper by searching the terms “relational capital” and “women” and enterprises”. Fourth, we found 17 papers by searching the term “women enterprises” (Table 2).

On May 30th 2017, we found 55 documents from the Scopus database that have been published after 2010, and we added to the previous list as “Other papers and chapters” category completing the topic analysis proposed (Table 3). The papers are directly analyzed in the literature analysis section thanks to the topic centrality.

Relevant studies from 2016 in the field of business, management and accounting

Through the use of research terms explained in the methodology sections on November 15th 2016, we selected 252 theoretical and empirical studies to define better the state of art on the connection between RC and women enterprises by answering the research questions. Specifically, in the first part of this study results, we decided to restrict the scope of the research to the use of previous terms searched in the field of business,

management and accounting (204 studies). We excluded totally the search results for the words “relational capital” and “enterprises” (54 documents) and “relational capital”, “women” and “enterprises” (1 document) owing to the low relevance of these topics for the current analysis.

In fact, from Table 4 and the analysis of all documents, we retain that there is no literature on RC in women enterprises. Hence, the study research questions will be solved in the future research following the analysis below by distinguishing, on one hand, RC and on the other hand, women enterprises. So, we consider the search results for “intellectual capital” and “relational capital”, on one hand (137 documents) and “women enterprises”, on the other hand (12 documents).

Starting from the analysis of the results on women enterprises, we got 12 documents related to the business, management and accounting research fields were used to answer the research questions (Table 4). With the aim to get a picture of the literature (RQ1) and to draw a framework that better focuses on the specificities linked to RC and women enterprises (RQ2), we decided to classify the 12 documents related to the search words on women enterprises, by adopting the Paoloni-Demartini framework (Paoloni and Cesaroni, 2016). We need to answer RQ3 and RQ4 only after answering RQ1 and RQ2. The classification system derived from Paoloni-Demartini framework is based on the identification of four categories of documents (Table 5) which are included in specific sub-classifications of documents.

After the classification of documents following the Paoloni-Demartini framework, we investigated documents included in the sub-classification “A2 “Female

Table 4. Scopus search results selection

Papers keywords	Subject area: Business, management and accounting	Core results
“Intellectual capital” and “relational capital”	137	137
“Relational capital” and “enterprises”	54	-
“Relational capital”, “women” and “enterprises”	1	
“Women enterprises”	12	12

Table 5. Classification system proposed from Paoloni-Demartini framework.

A. Article focus	B. Research area
A1. Corporate governance	B1- Psychology
A2. Female entrepreneurship	B2- Political and social
A3. Conflicts of interest	B3- Communication
A4. Differences	B4- Engineering
A5. Discrimination	B5- Business
A6. Other	B6- Non-academic
C. Geographical area	B7- Health
C1- Comparative	B8- Management
C2- Middle East	B9- Human Science
C3- South America	B10- Other
C4- North America	D. Research methods
C5- North Europe	D1- Literature review
C6- South Europe	D2- Qualitative
C7- Asia	D3- Quantitative
C8- Africa	D4- Mixed methods
C9- UK	D5- Normative
C10- Oceania	D6- Other

entrepreneurship” corresponding to the 12 documents. The sub-category A2 includes all researches in women enterprises, family business, relational capital and relationship activated by women during the enterprises lifecycle (Paoloni and Cesaroni, 2016). Under the application of the Paoloni-Demartini framework (Table 6), we found 12 documents included in the A2 “female entrepreneurship sub-classification”.

Pointing out the study analysis on the most relevant academic contributions on women enterprises, we also identified papers on female enterprises that had gained five or more citations. As a whole, to the study surprise, the result was equal to only 1 paper.

In the same way, we decided to analyze 137 documents on RC in the field of business, management and accounting by using the same framework applied for documents on women enterprises: we changed the article focus of the framework with RC topic (A) instead of original topics of the Paoloni-Demartini framework. Hence, we analyzed 137 documents on RC including female and men enterprises applying the Paoloni-

Demartini framework modifying the articles focus in “relational capital”. We found 12 documents for this category among 137 documents (Table 7).

In analyzing the most relevant academic contributions to RC, we identified papers that had gained five or more citations. Hence, the result is equal to 4 papers. After these two steps, we downloaded all the selected papers and classified them on an Excel sheet, highlighting the following factors:

1. Authors' nationality
2. Journals where they were published
3. Number of citations.

Results show that a large part of papers on women enterprises is written by UK authors (more than 58%) and is published in specialist journals (for example, International Journal of Gender and Entrepreneurship). In the second case, results show that a large part of papers on RC is written by Spanish authors (more than 41%) and is published in specialist journals (for example,

Table 6. Female entrepreneurship documents classification.

A. Article focus	No.	B. Research area	No.
A1. Corporate governance	-	B1- Psychology	-
A2. Female entrepreneurship	12	B2- Political and social	-
A3. Conflicts of interest	-	B3- Communication	-
A4. Differences	-	B4- Engineering	-
A5. Discrimination	-	B5- Business	12
A6. Other	-	B6- Non-academic	-
C. Geographical area	-	B7- Health	-
C1- Comparative	4	B8- Management	12
C2- Middle East	-	B9- Human Science	-
C3- South America	-	B10- Other	-
C4- North America	-	D. Research methods	-
C5- North Europe	4	D1- Literature review	1
C6- South Europe	-	D2- Qualitative	3
C7- Asia	3	D3- Quantitative	1
C8- Africa	-	D4- Mixed methods	1
C9- UK	-	D5- Normative	-
C10- Oceania	-	D6- Other	5

Table 7. Relational capital documents classification.

A. Article focus	No.	B. Research area	No.
Relational capital	12	B1- Psychology	-
		B2- Political and social	-
		B3- Communication	-
		B4- Engineering	-
		B5- Business	12
		B6- Non-academic	-
C. Geographical area		B7- Health	-
C1- Comparative	5	B8- Management	12
C2- Middle East	2	B9- Human Science	-
C3- South America	-	B10- Other	-
C4- North America	-	D. Research methods	-
C5- North Europe	3	D1- Literature review	-
C6- South Europe	1	D2- Qualitative	8
C7- Asia	1	D3- Quantitative	1
C8- Africa	-	D4- Mixed methods	3
C9- UK	-	D5- Normative	-
C10- Oceania	-	D6- Other	-

Journal of Intellectual Capital). We highlight that research on RC and women enterprises is still at an early stage of research, as demonstrated by the fact that most of the papers are published in few specialist/generalist journals (Table 8).

DISCUSSION

The previous literature review provides some insights on

the relationship between RC and female entrepreneurship, and it offers suggestions to define a research agenda in this area as follows:

1. The role of RC in female entrepreneurship is central in the analyses conducted on this topic
2. Literature on the relationship between RC and female entrepreneurship is not widely explored
3. Literature on RC and female entrepreneurship is explored by international authors particularly by Anglo-

Table 8. General insights of literature review.

Key words	Nationality of authors	Key-ideas upon findings	No. of documents extracted	No. of most cited documents extracted
Women enterprises	The majority of authors is from UK (more than 58%)	Business enterprise; women's empowerment; support and development; education and training; entrepreneurialism; strategic change; start up	12	1
Relational Capital	The majority of authors is from Spain (41.66%) and Iran (20%)	Relational capital and intellectual capital; customer relationship; consumer behavior; business to Business (B2B) and Business to Consumer (B2C); entrepreneurship; new venture formation; building family networks; knowledge management; relationship promoter; new business start up	12	4

Saxon countries through language and in developing countries owing to the woman conditions influenced by husband networks or family relationships (Paoloni, 2011).

We retain that results of such analyses need to be interpreted in the light of business women in other countries, who are characterized by very different conditions about diffusion of RC, socio-cultural context and women's role in society.

Mainly, the literature search does not show article analyzing the use of RC by women entrepreneurs working in large companies. Hence, issues emerging from these studies cannot be transferred to larger companies; as in the latter, the role of entrepreneur/manager is very different than theirs in micro-firms (Cesaroni and Consoli, 2015).

In larger companies, organization and management are more structured and organizational roles are more formally defined. Personal characteristics of an entrepreneur/manager are less influential on organization and a profound intertwining between personal and professional dimensions of his/her life is more difficult to occur.

In this way, we believe that research on the impact of social media should keep micro and small firms separate from medium and large firms.

At the end, we remember that the study analysis is based on two search steps:

1. 2010 to November 15th 2016
2. 2010 to May 30th 2017.

Moreover, we assume that before 2010, there were other literatures on the topic analyzed in the paper. However, we decided to investigate relevant and recent literature following specific criteria of research in order to map the trend of the last seven years.

CONCLUSIONS AND IMPLICATIONS

Based on the research questions, we assume that the terms RC and female entrepreneurship are not widely investigated by international literature (RQ1 and RQ2). In fact, we found only one paper from the literature search. For the other research questions (RQ3 and RQ4), we are going to answer thoroughly in a future case study analysis to connect to the current preliminary research on the topic. Particularly, the future research project will be focused on the use of RC by Italian female entrepreneurs that are in the start-up phases.

Borrowing from the CAOS model proposed by Paoloni (2011) to analyze the RC of women's

businesses, we would like to provide an interpretive framework, investigating whether and how the use of RC enables female entrepreneurs to increase their business competition as well as to improve their quality of life. In this perspective, we deem that relevant variables used to sketch the analyzed phenomenon are the following:

1. Personal characteristics of female entrepreneur;
2. Enterprise environment;
3. Organizational and managerial aspects;
4. Business time horizon.

These factors have been analyzed in different research on women entrepreneurship to highlight distinctive features of female enterprises (Sherer, 2003; Sarri and Trihopoulou, 2005; Klyver, 2011; Paoloni and Demartini 2012). Moreover, each of these factors influences and is influenced by the relational capabilities of the entrepreneur. In this way, personal characteristics outline what distinguishes one entrepreneur from another. These factors affect the role play by female entrepreneurs (Essers and Benschop, 2007) within their firms and their capability to build networks and take advantage of them.

The attitude of female entrepreneurs toward the use of new technologies and social media has

some relevance. An enterprise's environment summarizes the socio-economic-cultural context in which the enterprise is located. This context is able to influence all company connections created to interact with subjects in this context and among them. The environment of the enterprise also impacts the relationships that can be built using the social media tools. Organizational and managerial aspects highlight women entrepreneurs' objectives, tasks and responsibilities within the organization; with reference to social media, this variable aims to understand why and how women entrepreneurs use social media within the company and their expected benefits.

However, the study research project is directed to extending the analysis of the use of RC by micro and small-sized women enterprises in Italy. This project can allow one to gain a greater understanding of a relevant subject for all those scholars or politicians, who are involved in promoting women's entrepreneurship.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Relationship between intangible assets and financial performance of listed telecommunication firms in China, based on empirical analysis

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This paper follows an empirical approach to test the relationship between degree of intangible assets and profitability. It is important for shareholders to understand which critical factors influence firms' financial performance. All the data are based on 17 listed telecommunication firms' financial statements in China from 2014 to 2016. This study gives empirical evidence that intangible assets' ratios have positive and significant effect on firms' financial performance, measured by Return on Assets (ROA). As a result, the central tendency of samples' intangible assets ratios would be a reference intangible assets ratio range for other telecommunication firms. The limitation in measuring intangible assets is the difference between intangible assets reported in financial statements and measured by the market value minus its book value. Although in this study, the intangible assets follow current Chinese accounting standards rules, the difference does not influence the result.

Key words: Intangible assets, financial performance, intangible assets ratio, return on assets (ROA).

INTRODUCTION

According to the definition of asset, assets are future economic benefits controlled by the entity as a result of past transactions or other past events. The intangible asset can also bring benefits to entity. In the Chinese accounting standards, intangible assets include patents, copyright, franchise and land-use right. They are the companies' competitive advantage and hard to imitate. Andonova and Ruiz-Pava (2016) stated that the mechanisms to establish sustainable competitive advantage based on intangible assets might be absent in emerging countries. Therefore, the relationship between

intangible assets and the companies' performance should have positive correlation, if there is a mature market structure in China.

Marrocu et al. (2012) stated that in the most advanced developed industrial economies, there is a strong relationship between economic performance and intangible assets. Although in the 2016 Doing Business ranking taken by the World Bank, China ranks 5th out of 188 in enforcing contract (World Bank, 2016), can China be confirmed as advanced industrial economy? In the advanced industrial economy, patents, copyright,

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franchise and land-use right are protected by property right. Companies owned their intangible assets and can make use of them as competitive advantages and get more revenue from them. However, in the developing industrial economies, Hoskisson et al. (2000) claimed that good relations with local government and relationship-based management are real competitive advantages for companies in those countries. There is an assumption that if in China, intangible assets owned by companies can promote companies performance better than tangible assets, the market structure is competitive and mature.

To measure the degree of intangible assets in a company, intangible assets ratio was used in this study (intangible assets divided by total assets). To measure the company's performance, the financial indicator return on asset (ROA) was selected, because ROA shows how profitable, a company's assets are in generating revenue. The total asset turnover is used to evaluate both the business performance and financial position (Zager et al., 2008). Furthermore, return on assets (ROA) and net profit margin are always considered together, because the net profit margin has a direct impact on return on asset (Gibson, 2013). If intangible asset ratios of sample firms in China are in the reasonable range and shows a strong positive correlation with ROA, it indicates intangible asset can promote company's performance and can make more income than tangible assets. On the other hand, if intangible assets ratios of sample firms in China are highly correlated with ROA and the correlation is positive, it shows that the central tendency of these intangible assets ratios are a good ratio range and can be a reference ratio range for others in the same firms. Firms can balance their intangible and tangible assets by the reference intangible asset ratio range in order to get an optimal assets structure.

LITERATURE REVIEW

Intangible assets

Under IFRF (International Financial Reporting Foundation, 2004) of IAS 38 (International Accounting Standard), intangible asset is an identifiable non-monetary asset without physical substance. Hence, intangible assets are future economic benefits controlled by the entity as a result of past transactions or other past events, but just do not have a physical form. According to the International Accounting Standard (IAS) 38, intangible assets include patented technology, computer software, licensing, franchise agreements and trademarks, etc. However, according to People's Republic of China Generally Accepted Accounting Principles (PRC GAAP), trademarks can be recognized only if the trademarks are purchased from external. However, land use rights are realized as intangible asset in China. But the different recognition would not influence the research in this study.

Firstly, most scope of intangible assets is similar between PRC GAAP and IAS. Secondly, land use rights just account for a small proportion in listed telecommunication companies in China.

Intangible assets reflect core competitive competence of firms. Tsai et al. (2012) stated that intangible assets represent the future profitability and growth opportunities that promote increasing firm value.

Intangible assets and company's performance

Riahi-Belkaoui (2003) stated that intellectual capital of sampled multinational companies in USA is positively associated with their financial performance. Megna and Klock (1993) found that the intangible assets can contribute to the value of Tobin's Q. Lantz and Sahut (2005) stated that there is a positive correlation between R&D expenditures and firm's market value. Erawati and Sudana (2005) revealed that intangible assets would affect the firm's financial performance which is reflected in firm's return and income. Appelbaum et al. (2017) stated that intangible assets affect agility and business performance as well. Kothari et al. (2002) found that when R&D expense increases, the firms' future earning will increase as well.

Hypothesis

H1: Intangible assets presented in the financial report grow faster than tangible assets in listed telecommunication companies in China. In advanced industrial countries, intangible assets play a key role in creating companies' competitive advantages (Hoskisson et al., 2000). If firms in China invest more resources on intangible assets than tangible assets in their business strategies, it reveals China is becoming an advanced industrial economy and has competitive market structures.

H2: Intangible assets ratio affects financial performance. There is an assumption that in China, the listed telecommunication companies with higher degree of intangibility (the degree is in a reasonable range) would get more profitability. If there is a positive correlation between the degree of intangibility with ROA, based on the data of samples, the central tendency of these intangible asset ratios could be the reference ratio range for other telecommunication companies in China, in order to balance intangible and tangible assets.

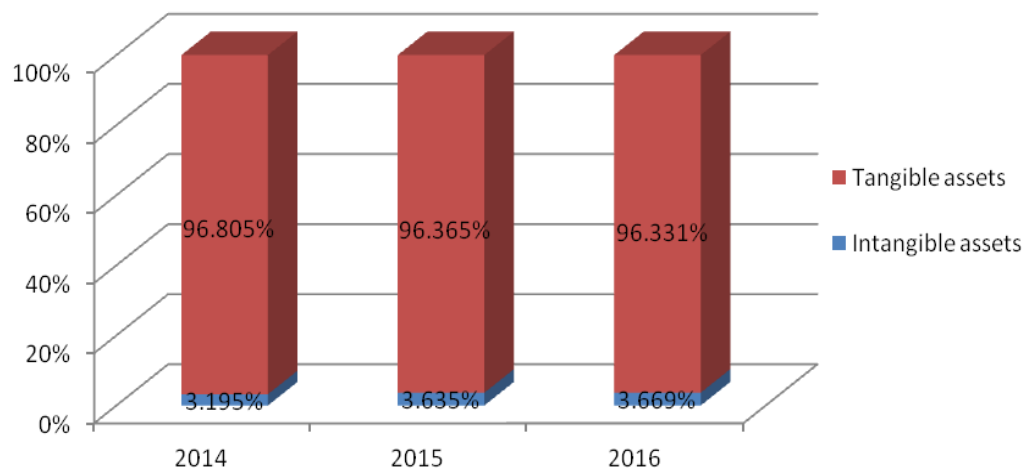
METHODOLOGY

Data and measures

This essay uses public financial data from listed telecommunication firms' annual financial report in China from 2014 to 2016. All the data comes from Sina Finance (1996-2017). The type of industry selected is telecommunication, because intangible

Table 1. Variables description.

Variable	Description
IAR(Intangible assets ratio)	Intangible asset/total asset
ROA	Return on assets: Net income/assets

**Figure 1.** Tangible assets vs. intangible assets.

assets in these firms are more obvious than other industries in common sense. In order to avoid the influence of firms' scale, the total assets of sample firms are between ¥3 billion and ¥7 billion. According to China Securities Regulatory Commission (CSRC) industry classification, there are 40 firms which belong to telecommunication industry. Only 26 telecommunication firms have total assets between ¥3 billion and ¥7 billion. Based on simple random sampling, the size of sample in this essay is 17 listed telecommunication firms. All the data of intangible assets, total assets and ROA are from their annual public financial reports from 2014 to 2016. Therefore, there are 51 samples in this essay.

Variables

Profitability is measured by the ROA. One reason is that ROA is an indicator often used in accounting to evaluate the performance of companies. Other reason is that ROA can indicate how many dollars of earnings they derive from each dollar of asset they control. If high degree of intangibility are associated with high ROA, it shows intangible assets in these companies can earn more profit than tangible assets. The degree of intangibility is measured by dividing intangible assets by total asset. It can be referred to as intangible assets ratio (Table 1).

RESULTS

Hypothesis 1 tests

According to the data of financial report of sample firms (Figure 1), the percentage of intangible assets increased

from 3.195 to 3.669%, in the period of 2014 to 2016. It indicates that listed telecommunication companies invest more percentage of intangible assets and decrease the proportion of tangible assets in recent years, in order to create competitiveness and get more profit in the future. Hence, hypothesis H1 is confirmed (Table 2a).

Table 2b illustrates the main descriptive statistics measures. The mean of intangible assets ratios is 0.0379. The standard deviation of intangible asset ratio is 0.036. Because the skewness of intangible asset ratio is >0 , the mass of the distribution is concentrated on the left of the figure. Therefore, the median of intangible asset ratio is better than mean for measure of central tendency (Table 2c). The median of intangible asset ratio is 2.469% which stands for the central tendency of all samples' intangible asset ratio, in the period from 2014 to 2016.

Hypothesis 2 tests

Results of regression analysis for H2

Table 3a shows that Intangible assets ratio and ROA have a correlation coefficient of 0.339 and determination coefficient $r^2=0.115$, meaning that the given independent variable (intangible assets ratio) and dependent variable (ROA) together have 37% of common elements. Although, it is a low strength connection, there is just one

Table 2a. Descriptive measure of intangible assets.

	N	Minimum	Maximum	Sum
2014 Intangible assets	17	0.0000	35550.3000	179877.1300
2015 Intangible assets	17	763.5200	40460.4000	261649.0700
2016 Intangible assets	17	747.8200	61028.7000	311525.0900
Valid N (listwise)	17			

Table 2b. Descriptive statistics.

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic Std. Error	Statistic Std. Error
Intangible asset ratio	51	0.000000000	0.168295145	0.03790831967	0.036039989842	1.815 0.333	3.351 0.656
ROA	51	-2.220500000	12.118600000	3.98058627451	2.768165329746	0.572 0.333	1.004 0.656
Valid N (listwise)	51						

Table 2c. Summary statistics of intangible asset ratio.

Intangible assets ratio		
N	Valid	51
	Missing	0
Mean		0.03790831967
Median		0.02469155100

Table 3a. Model summary.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.339 ^a	0.115	0.097	2.631099314357

independent variable. Hence, the correlation is still reasonable and meaningful (Table 3b and c).

The influence of intangible assets ratio on ROA is indicated by the path coefficients 0.339 which means intangible assets ratios have positive effect on ROA. The obtained significance value $0.015 < P \text{ value } (0.05)$ means the positive effects are statistically significant. These indicate intangible assets ratios have positive and significant influence on ROA. These mean that the higher the intangible assets ratio, the more profitable a company's assets are in generating revenue. This confirmed the hypothesis H2 that intangible assets ratio has a significant effect on ROA (Figure 2). Regression equation derived from the results of analysis:

$$\text{ROA} = 2.995 + 26.007\text{IAR}$$

Although intangible asset ratio and ROA have a low correlation coefficient of 0.339 and determination

coefficient $r^2 = 0.115$, there is just one independent variable (intangible asset ratio) in this study. Hence, there is still a statistically significant positive correlation between intangible assets ratio and ROA ($P < 0.05$). It means that in the scope of intangible assets ratio, from 0 to 16.83%, the higher intangible assets ratio, the higher the ability of total assets to generate revenue. But the positive correlation between intangible assets ratio and ROA is obtained, only because the range of all samples' intangible assets ratio is reasonable. Consequently, using the central tendency of all samples' intangible assets ratio as a reference ratio for other telecommunication firms in China is logical and meaningful.

The distribution of intangible assets ratios are positive skew, as extreme values have a more effect on the mean than on the median, as shown in Figure 3. Both median and mean are the measure of central tendency. Therefore, the range from the median to mean of intangible asset ratio could be used as the range of reference ratio for other telecommunication companies.

Table 3b. ANOVAa.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.925	1	43.925	6.345	0.015 ^b
	Residual	339.211	49	6.923		
	Total	383.137	50			

a. Dependent variable: ROA; b. Predictors: (Constant), intangible asset ratio

Table 3c. Result of regression analysis for the influence of intangible assets ratio on ROA.

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	2.995	0.538		5.571	0.000
Intangible asset ratio	26.007	10.324	0.339	2.519	0.015

a. Dependent variable: ROA.

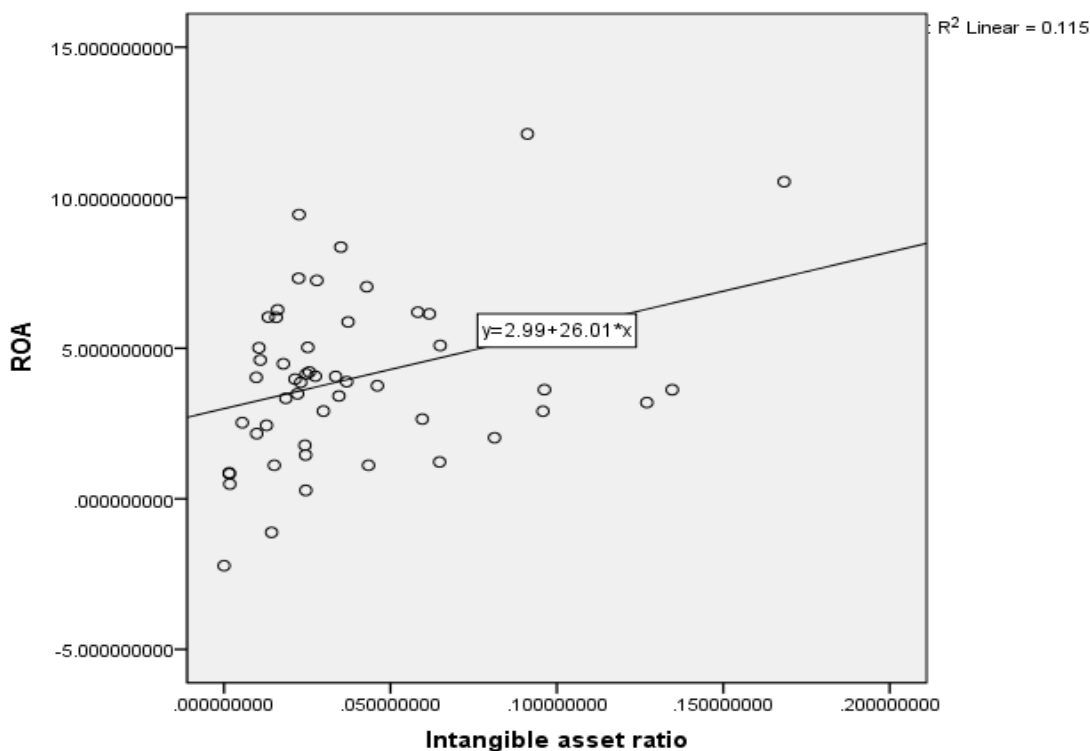


Figure 2. Result of linear regression of intangible asset ratio and ROA.

Therefore, in China, the scope from 2.469 to 3.791% is a reasonable intangible assets ratio range for telecommunication firms recently. There are two reasons why the range of intangible asset ratio is very low. One reason is that according to Chinese accounting

standards, some types of intangible assets are not presented in any financial reports, such as reputation, employment contracts, distribution and trademarks which are generated internally. Another reason is that the data of intangible assets used in this study is reported in the

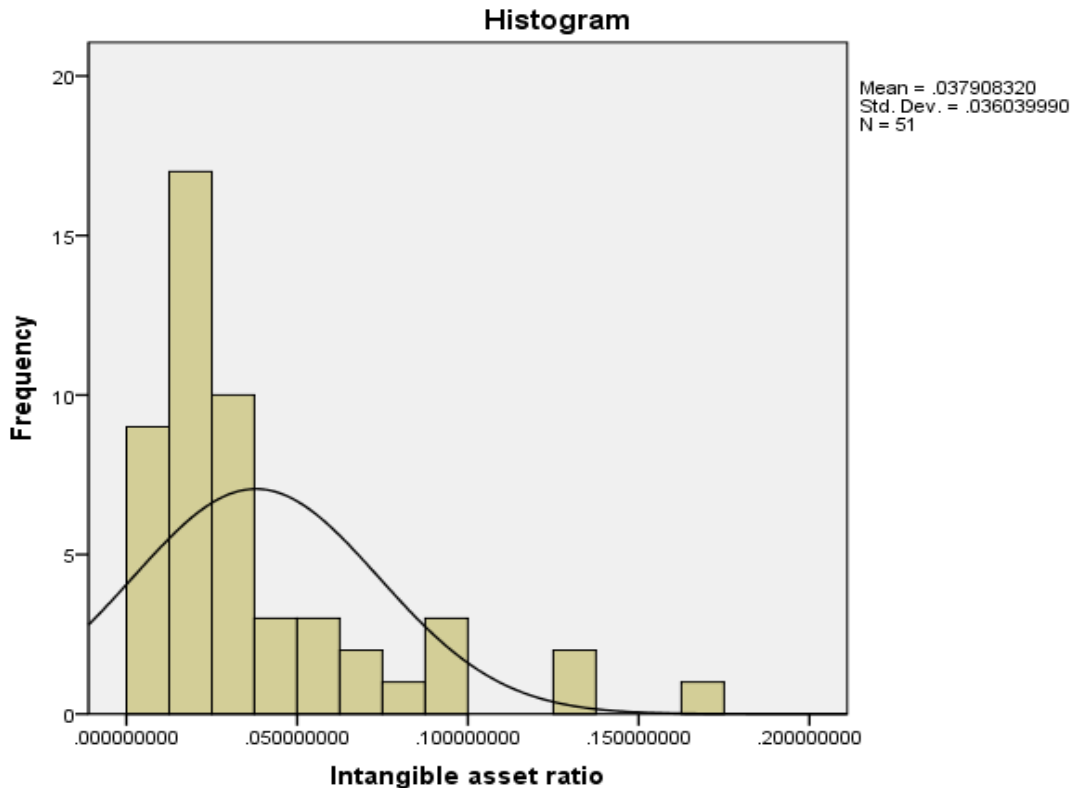


Figure 3. Histogram of the intangible asset ratio.

balance sheet of the listed companies and is not determined by comparing the market value with its book value (Kok, 2007).

Conclusions

This paper examines the influence of intangible assets on firms' financial performance. The result of the regression model demonstrates that intangible assets ratio has positive and significant effect on ROA for listed telecommunication companies in China. The higher investment in intangible assets, the higher the ability of total assets to gain revenue. This result supports previous research that intangible assets have positive and significant effect on firms' performance. It also confirms that the market structure of China is competitive and mature. However, the previous studies are mainly focused on companies in Europe and North America. At last, the range of central tendency of intangible assets ratios is used as reference ratio range for other listed telecommunication companies in China.

CONFLICT OF INTERESTS

The author declares that there is no conflict of interests.

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