

# sinergie

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## The future of entrepreneurship

MAY- AUG  
2015

**Guest Editors: Amedeo Maizza - Lorenzo Zanni**

*Demetris Vrontis - Claudio Baccarani - Gaetano M. Golinelli*

Editorial: Looking to the future

*Amedeo Maizza - Lorenzo Zanni*

Present challenges and future opportunities in entrepreneurship

### Special issue papers

*Jan Green - Ben Binsardi*

Entrepreneurial intentions: a grounded theory of green-fielding

*Alberto Onetti - Federica Pepponi - Alessia Pisoni*

How the founding team impacts the growth process of early stage innovative startups

*Demetris Vrontis - Milena Viassone - Alkis Thrassou*

The role and potential of social networks sites in tertiary education

*Monica Fait - Federica Cavallo - Paola Scorrano - Lea Iaia*

Wine web 2.0: digital communication and tourist netnography.  
Opportunities for new entrepreneurship

*Diego Matricano - Mario Sorrentino*

Implementation of regional innovation networks: a case study of the biotech industry in Campania

*Alberto Ferraris - Cecilia Grieco*

The role of the innovation catalyst in social innovation - an Italian case study

*Federica Evangelista - Rosa Lombardi - Giuseppe Russo - S.M. Riad Shams*

Exploring structural capital from the business administration perspective: a general framework on the existing literature

*Tommaso Pucci*

New venture creation in academia: preconditions and drivers for the emergence of academic spin-offs

*Elena Casprini*

Business model innovation: a typology

*Kevin Mullaymeri - Athanasios Bizmpiroulas - Olgica Loznaliev - Konstantinos Rotsios*

The internationalization of wine SMEs in the midst of the economic crisis: pilot case studies from Greece, Albania & FYROM



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## The future of entrepreneurship

**Guest Editors: Amedeo Maizza - Lorenzo Zanni**

Aphorisms pag. 7

*Demetris Vrontis - Claudio Baccarani - Gaetano M. Golinelli*

Editorial: Looking to the future “ 9

*Amedeo Maizza - Lorenzo Zanni*

Present challenges and future opportunities in entrepreneurship “ 11

### Special issue papers

*Jan Green - Ben Binsardi*

Entrepreneurial intentions: a grounded theory of green-fielding “ 17

*Alberto Onetti - Federica Pepponi - Alessia Pisoni*

How the founding team impacts the growth process of early stage innovative startups “ 37

*Demetris Vrontis - Milena Viassone - Alkis Thrassou*

The role and potential of social networks sites in tertiary education “ 55

*Monica Fait - Federica Cavallo - Paola Scorrano - Lea Iaia*

Wine web 2.0: digital communication and tourist netnography. Opportunities for new entrepreneurship “ 83

*Diego Matricano - Mario Sorrentino*

Implementation of regional innovation networks: a case study of the biotech industry in Campania “ 105

*Alberto Ferraris - Cecilia Grieco*

The role of the innovation catalyst in social innovation - an Italian case study “ 127

*Federica Evangelista - Rosa Lombardi - Giuseppe Russo - S.M. Riad Shams*

Exploring structural capital from the business administration perspective: a general framework on the existing literature “ 145

*Tommaso Pucci*

New venture creation in academia: preconditions and drivers for the emergence of academic spin-offs “ 161

<i>Elena Casprini</i> Business model innovation: a typology	pag.	181
--	------	-----

<i>Kevin Mullaymeri - Athanasios Bizmpiroulas - Olgica Loznaliev - Konstantinos Rotsios</i> The internationalization of wine SMEs in the midst of the economic crisis: pilot case studies from Greece, Albania & FYROM	“	199
---	---	-----

### Feature

<i>Alex Douglas</i> TQM and Sustainability	“	213
---	---	-----

### Original research paper

<i>Angelo Bonfanti-Federico Brunetti</i> Effects of customer education in terms of customer perceived value: the role of customer evaluation skills	“	219
--	---	-----

<i>Stefano Olgiati - Alessandro Danovi</i> The financial unsustainability of the Italian public health care system	“	239
---	---	-----

<i>Andrea Chiarini - Alex Douglas</i> The impact of logistics solutions on customer satisfaction: an exploratory qualitative study of manufacturing companies	“	255
--	---	-----

<i>Rossella Canestrino - Pierpaolo Magliocca - Claudio Nigro</i> Drivers and implications of medical tourism: a neo-institutional perspective	“	271
--	---	-----

<i>Salvatore Esposito De Falco - Agostino Vollero</i> Sustainability, longevity and transgenerational value in family firms. The case of Amarelli	“	291
--	---	-----

### Back to the future

<i>Claudio Baccarani-Gaetano M. Golinelli</i> The non-existent firm: relations between corporate image and strategy	“	313
--	---	-----

### Book reviews

Gian Italo Bischi, Liliana Curcio, Pietro Nastasi (a cura di), <b>Civiltà del Miracolo</b> , by <i>Umberto Casari</i>	“	327
--	---	-----

### Useful information for readers e authors

News from Sinergie's web portal <a href="http://www.sinergiejournal.it">www.sinergiejournal.it</a>	“	335
Aims and scope	“	337
Peer review procedures	“	339
Publishing ethics	“	340
Submission procedure and editorial rules	“	341

1. *"We don't stop playing because we grow old; we grow old because we stop playing".*  
(George Bernard Shaw)
2. *"I hear babies cry, I watch them grow, they'll learn much more, than I'll ever know. And I think to myself, what a wonderful world".*  
(Louis Armstrong)
3. *"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn".*  
(Alvin Toffler)
4. *"It is good to be alive because living is beginning, always, every moment".*  
(Cesare Pavese)
5. *"That's what the future is for: to build the present, with real plans, made by living people".*  
(Muriel Barbery)





# Editorial: Looking to the future

Demetris Vrontis  
Claudio Baccarani  
Gaetano M. Golinelli  
Editorial: Looking to  
the future

*Sinergie* is open to collaborations, and recently embarked upon a process of internationalisation. A collaboration agreement has been established with EuroMed Research Business Institute (EMRBI), an international research network that shares the same values as *Sinergie*. EuroMed Research Business Institute (EMRBI) creates and disseminates management knowledge through its annual conferences and related journals. This goal is shared by *Sinergie* and EuroMed Research Business Institute (EMRBI), who are both attentive to the wellbeing of individuals and communities, especially in the Mediterranean region.

Our common goal is to foster dialogue between academics and practitioners, and to assert the role of companies in building a future in which the production and dissemination of wellbeing is a priority for businesses.

The subject of this issue is the future of entrepreneurship. This issue represents the first step in the collaboration between *Sinergie* and EuroMed Research Business Institute (EMRBI). It highlights some further steps that will soon be brought to the attention of our community.

Demetris Vrontis    Claudio Baccarani    Gaetano M. Golinelli



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p. 9





# Present challenges and future opportunities in entrepreneurship

Amedeo Maizza  
Lorenzo Zanni  
Present challenges and  
future opportunities in  
entrepreneurship

Amedeo Maizza - Lorenzo Zanni

This volume represents the first scientific partnership between two networks of research specialized on management studies: EuroMed Research Business Institute (EMRBI) and CUEIM, the consortium of research that is the publisher of *Sinergie Italian Journal of Management*.

This Special Issue hosts ten papers selected from two EuroMed Conferences: the 7th EuroMed Annual Conference entitled “*The Future of Entrepreneurship*” (Kristiansand, Norway, September 2014) and the “*Contemporary Trends and Perspectives in Wine and Agrifood Management*” Conference (Lecce, Italy, January 2015). The papers selected have both Italian and foreign authors. The Journal aims to foster a cross national scientific dialogue and to develop a theoretical debate between different schools of thought. As Baccarani and Golinelli (2014, p. vii) say, the new cultural path for the Italian scientific community needs “to accelerate the internationalization process without giving up its national identity”.

As guest editors of this Special Issue, our work was divided in two steps. First, we selected a number of papers considered relevant to the editorial policy of *Sinergie* and that treated topics coherent with the scientific goals of this special issue. Then, all the authors invited had to follow a double blind review process (referees were both Italian and foreign management scholars). We would like to thank these reviewers, whose precious work helped us to select and to improve the quality of the final list of papers accepted.

The papers selected make, in different ways, an original contribution on the subject *The Future of Entrepreneurship* - an important topic for academics, businessmen and policy makers. Entrepreneurship is “the dynamic process of creating incremental wealth. Wealth is created by individuals who assume the mayor risks in terms of equity, time and/or career commitment or provide value for some product or service. The product or service may or may not be new or unique, but value must somehow be infused by the entrepreneur by receiving and locating the necessary skills and resources” (Ronstadt, 1984, p. 28; Hisrich, 2014, p. 8)

The areas of research on entrepreneurship are wide and deeply connected with economic changes. Theory should consider that business models and entrepreneurial processes are strongly influenced by the impact of innovation technologies (new industries, products, services, materials, etc.), by the emergence of new organizations and social environments that can breed and grow entrepreneurs (science parks, incubators, clusters, networks, etc.), by the changes related to globalization (new emerging competitors, new forms of international entrepreneurship, the effect of immigration flows, etc.), by the need for new knowledge to build a sustainable competitive advantage (which determines pressure on education systems and on ICT infrastructures to support the start up of new business), by the need for a

financial system that can support the process of firm start up and growth. If we want to reflect on the *Future of Entrepreneurship*, which is the goal of this special issue, we have to consider the impact of all these changes on different units of analysis (single firm, single actor, single local/national economic environment). Some borders that have traditionally influenced entrepreneurial studies are gradually fading and are changing firms (with a growing servitization and dematerialization of their activities), industries (with a stronger inter-sectorial competition and the birth of meta industries and meta-markets), and local economies (with the emergence of open innovation processes where the key drivers forces are local and global networks). Some of these changes are on-going and we are not always able to outline precise scenarios; we are conscious that some questions remain open.

In this Special Issue, whose aim is to contribute to the scientific and public debate, the reader could find few answers to some of these questions. We tried to provide an insight into the varied lines of research in the two EuroMed Conferences analysed. The papers selected present different contributions ranging from analysis of the problems of a financial nature, to those of the processes of web marketing and internationalization, through the examination of the difficulties in the development of the start-ups. Nonetheless, all the works share the willingness of the authors to provide new elements of knowledge in different business contexts.

In particular some of the authors focus their attention on the figure of the entrepreneur, the main actor of economic change. *Green and Binsardi* examine entrepreneurial intentions and early venture concerns using a grounded theory as the methodology of analysis. *Onetti, Pepponi and Pisoni*, meanwhile, examine how the founding team impacts the growth process of early stage innovative start-ups using a cluster analysis methodology.

Two other papers focus their attention on the impact of new technology on entrepreneurship. On the one hand, *Vrontis, Viassone and Thrassou* analyse the role and potential of social networks sites in tertiary education; the research examines the usage of social networks for educational aims and evaluates the perception of university students towards this kind of usage. The impact of ICT and social media does not only change the economic environment, but also the education system: academic courses and teaching methods have to consequently innovate if they want to face these new challenges. On the other hand, *Fait, Cavallo, Scorrano and Iaia* examine opportunities of new entrepreneurship in a traditional industry (wine business) facing the use of new web marketing strategies; in particular they focus on the digital communication and tourist netnography and confirm that new types of firms (web services), consumers, and marketing strategies (web 2.0 for wine tourism) are also emerging in traditional industry.

Two papers focus their attention on the role of networks as an important driver of entrepreneurship and innovation in local systems. In both cases the local government acts as entrepreneur, and the public institution is the main driver of industrial development and of the creation of new ventures. *Matricano and Sorrentino* examine the case of the Biotech

Industry in Campania Region as an example of implementation of a regional innovation network. The authors investigate whether the emergent regional innovation network, promoted by the Campania Regional Authority, could become sustainable, i.e. whether it can achieve the expected results and last in the future. A similar topic of research is analysed by *Ferraris and Grieco* who focus on the role of innovation catalysts in social innovation. They examine the TrentoRise case study, an Italian public innovation catalyst based in Trentino Region (Italy). Their goal is twofold: to explore "how the innovation catalyst can foster social innovation in an innovation ecosystem" and "how the innovation catalyst should operate".

The paper of *Evangelista, Lombardi, Russo and Shams* explores the role of structural capital from the business administration perspective; a general framework is developed based on a literature review. The paper's focus is on entrepreneurial firm growth and financing. In particular, the authors look at intangible components, with the aim to understand the optimal composition of firm resources, connected to effective management control systems.

The paper of *Pucci* examines the new venture creation in academia. The study explores the determinants for the emergence of academic spin-offs (ASOs). Individual, institutional and infrastructural factors that lead to the emergence of ASOs and their influence on the business model choice of firms in the start-up phase are examined. The analysis is based on quantitative and qualitative methods and the centre of research is the life sciences faculty of the University of Siena.

The paper of *Casprini* aims to provide a typology of business model innovation (BMI) and to clarify its link with strategy. After a literature review conducted through the ISI Web of Science database and the introduction of a new theoretical framework, the author focuses on the servitization strategy and shows multiple business model configurations entrepreneurs may choose from when changing their strategy.

Finally, the paper of *Mullaymeri, Bizmpiroulas, Loznaliev and Rotsios* explores the internationalization efforts of wine SMEs in three neighbouring countries, namely Greece, Albania and FYROM. The aim is to identify particular issues faced by small wine producers in order to determine the variations among the countries. A multiple case study methodology allows an international comparative analysis of small firms in the Balkan Peninsula. Results indicate that the negative Country of Origin Effect, the limited brand equity and the scarce availability of resources (due to the small size) are frequent and are considered to be major export obstacles to improving the international performance of these wine SMEs.

Three general reflections emerge from the analysis of all selected papers.

First, the strong connection between entrepreneurship and economic development, a phenomenon well known in management studies (Sexton and Kasarda, 1992) is confirmed. If we talk about entrepreneurship, we cannot fail to consider the analysis of the context (and verification of scientific hypotheses behind the work). This is because the environment influences and is influenced by economic realities. Moreover, entrepreneurship favours a process of imitation that generates positive effects in terms of spread and contamination of results. These aspects are crucial in the development processes of territories and communities.

Second, a wide range of topics could be addressed to understand entrepreneurship, and both qualitative and quantitative methodologies are adopted to verify and confirm the theoretical hypotheses formulated. Research issues in entrepreneurship show that in the future there is no one best way or predominant topic on which to focus attention.

Last but not least, the firm maintains a central role in all the papers. Analysing the structural characteristics of the firm is essential for anyone involved in management studies. This statement may seem obvious and trivial, but it still remains underappreciated by recent economic literature. Following passing trends, we sometimes forget the fundamental teachings of few influential Italian management authors: their ideas have not aged and maintain their originality despite the deeply changed environment. Italian scholars should be open to the international scientific debate, but they should also be aware of the originality of the inherited Italian scientific contributions. From this point of view, we are glad to find in this special issue reference to a few Italian scholars (Fazzi, Golinelli, Vallini) together with recent international literature. These authors provided important theoretical bases to entrepreneurship and enterprise development in Italy. Italian scholars are glad to contribute to the international scientific debate, but they also believe that “the future of entrepreneurship” has strong roots in their past.

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## **Special issue papers**





# Entrepreneurial intentions: a grounded theory of green-fielding

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11<sup>th</sup> July 2015

Jan Green - Ben Binsardi

## Abstract

**Purpose of the paper:** *As a conclusive rationale behind continued global growth in entrepreneurial activity remains the subject of academic and economic debate, the purpose of this paper is to provide additional insight into the sources of entrepreneurial intentions.*

**Methodology:** *The methodology used is grounded theory, an inductive approach which generates theory rather than verification of existing findings. The coding procedures lead to sub-categories, data patterns and a core.*

**Limitations:** *The research is limited in two areas, first the range of sectors and second the geographical coverage which is restricted to entrepreneurs located in North East Wales.*

**Implications:** *As i-career is increasingly attractive to a range of demographic sectors, the implications further challenge traditional employment progress and patterns. That may require businesses to review structure and reward offers to provide additional flexibility for contractual placements.*

**Originality:** *Within the concluding discussion it is evident that the broad nature of entrepreneurial origins produces additional knowledge as contemporary working patterns evolve to encompass societal and economic changes and priorities, the i-career. The content has value to a wide spectrum of businesses for role planning and workforce arrangements, and also to the would-be entrepreneur.*

**Key words:** *green-fielding; grounded theory; entrepreneurial intentions; careers*

## 1. Introduction

An expansion in zero and micro-sized businesses was accurately predicted to continue increasing (Green, 2012a, Green, 2012b) and reflects the growth in project-based i-careers, characterised by an individual operating in the manner of a business entity. Various sources, including the UK Global Entrepreneurship Monitor ([www.gemconsortium.org/Data](http://www.gemconsortium.org/Data)) and the Department for Business, Innovation & Skills that published a paper entitled 'Early Stage Entrepreneurial Activity Rate', ([www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/198828/early-stage-entrepreneurial-activity-rate](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/198828/early-stage-entrepreneurial-activity-rate), May 2013) report a steady increase in business start-ups following a relatively static period since the millennium. Burn-Callendar (2013) reported 90,000 new businesses being created in the first half of 2013, a rise of 3.4% during the same period in 2012. Almost half of these businesses were set up with less than £2,000 of working capital and required no external funding. Companies House figures for new start-ups

in the UK have increased from 484,224 in 2012 to 526,447 in 2013 and unaudited indications suggest the total figure for 2014 is 581,173.

The education sector in Wales is supporting would-be entrepreneurs with two new courses that both commenced in October 2013. In Swansea, a new BTEC qualification for 16-19 year olds was launched under the banner of the Entrepreneurship Academy Wales. Glyndŵr University validated a BSc Entrepreneurship, the first course of its type in Wales and welcomed the first cohort of students in autumn 2013.

Established entrepreneurial businesses are participating in a pledge to make Wales a centre of entrepreneurial activity. This initiative is supported by The Big Debate ([business.wales.gov.uk/entwales2013](http://business.wales.gov.uk/entwales2013)). The debates ran from November 2013 to March 2014 and attracted wide audiences.

Expanding the context to encompass an international perspective, the European Commission has developed an Entrepreneurship 2020 Action plan to provide an answer to the greatest economic crisis in 50-years and revolutionize the culture of entrepreneurship ([www.eu.europa.eu/growth](http://www.eu.europa.eu/growth)). The European Commission refers to entrepreneurship as the backbone of Europe's economy, representing 99% of all businesses in Europe and being responsible for 85% of new jobs and two thirds of total private sector employment in the European Union.

There are three key points to the 2020 Action Plan:

1. entrepreneurial growth and training;
2. removing existing administrative barriers to entrepreneurial businesses;
3. reigniting a culture of entrepreneurship in Europe and nurturing the new.

In October 2014, the UK launched an initiative called 'Supporting Entrepreneurship in Europe' to back the 2020 Action Plan ([www.publicpolicyexchange.co.uk](http://www.publicpolicyexchange.co.uk)).

Based on this growth momentum, the purpose of this paper is to explore and establish the range of personal intentions that lie behind this structural change in the make-up of businesses ([www.telegraph.co.uk/finance/businessclub/10481135](http://www.telegraph.co.uk/finance/businessclub/10481135)). Entrepreneurial expansion is cited as being the driver behind economic growth in the UK during the 2013/14 period and, one in five of the 90,000 new businesses started in the first half of 2013, is classified as high growth.

In terms of age profile, one in six new businesses started in the UK are run by individuals who are 50 and over ([bbc.co.uk/2/hi/business/7138965](http://bbc.co.uk/2/hi/business/7138965)). This point emphasises the gap in previous studies, as a search of the literature revealed that most previous researches on entrepreneurial intentions had used student samples (Vinogradov *et al.*, 2013). This outcome reveals a new gap, which was subsequently increased to a second gap, when searching for previous studies related to aristocratic entrepreneurs which proved to be almost non-existent. These gaps provided a rationale and a justification to undertake the research, based on the practising entrepreneurial individual, as the unit of analysis.

As the profile of employment in the UK and throughout Europe is changing rapidly, the paper aims to generate a grounded theory, a methodology that creates new theory and knowledge, by providing

a contribution of relevance to two key factors; working patterns and entrepreneurial intentions. A property of grounded theory is transferability and this aspect will not only support the theory in the international field adding a contribution as the data is collected from practitioners, but will also contribute to entrepreneurial planning.

The research question that the study seeks to address is, “What concerns need to be resolved in the early stages of an entrepreneurial venture?”

Jan Green  
Ben Binsardi  
Entrepreneurial  
intentions: a grounded  
theory of green-fielding

## 2. Literature Review

This section presents a concise review of the literature that has relevance to the concepts which contribute to the theory of green-fielding.

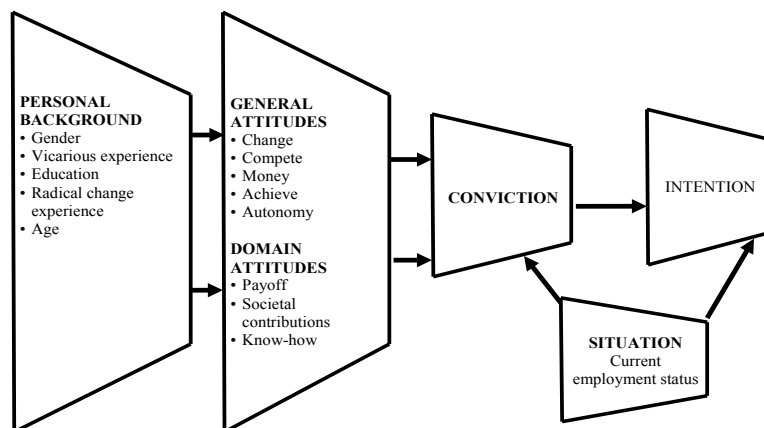
The provision of a precise definition of an entrepreneur is subject to extensive debate within the literature which Yeung (2002) referred to as being a jungle of terminology. The view that it is insufficient to define an entrepreneur as an innovator without some inclusion of commercialisation (Howorth *et al.*, 2005) is based on the difficulties associated with the separation of actions and characteristics of entrepreneurship and the dynamic nature of the concept.

Carter and Jones-Evans (2000) refer to the involvement of managerial skills and capabilities that enable small businesses to demonstrate entrepreneurship in responding to structural and economic change. Ahmed *et al.*, (2012) propose that most existing definitions of entrepreneurship and entrepreneur incorporate the outcomes of entrepreneurial activity. Also featuring, in attempts to create a precise definition, is the creation of new organizations and identifying and implementing goals using initiative to build an enterprise based on the individual traits of self-motivation and self-reliance.

There are a number of models referred to within the literature appertaining to entrepreneurial intentions. One is cited as being ‘The Classic Entrepreneurial Intentions Model’ by Elfving *et al.* (2009) that was originally developed by Krueger and Carsrud (1993) and makes reference to perceived social norms, that may be present during early upbringing, perceived desirability of the entrepreneurial state as one driver and perceived self-efficacy and perceived feasibility as a second driver, where personal beliefs are a driver and practicalities are not overwhelming. All four factors combine to support intentions.

The second model is the theory of planned behaviour. Ajzen (2012) reviews the elements of the model which prioritises the extent to which people believe they can perform a given behaviour if they are inclined to do so. Contributory factors include pre-determined action towards a specific target within a context and timeframe. Individuals behave in a manner that overcomes obstacles using information and skills. Performance and perseverance generally increase with self-efficacy that supports “go through” (Green, 2012a, p. 106), when expected consequences and anticipated difficulties require perseverance (Ajzen, 2012), frequently evident in the early stages of the entrepreneurial venture.

Fig. 1: An economic-psychological model of determinants of entrepreneurial intentions



Source: Davidsson, (1995, p. 5)

Drawing on a range of factors, previously identified by numerous authors related to entrepreneurial intentions, Davidsson (1995) designed an economic-psychological model of entrepreneurial intentions, illustrated in figure 1. The early indications emanate from the choice to improve the current economic situation, which develop into a conviction.

Secondary factors are the presence or influence of a role model and decisions occur more frequently in what is described as a free-choice period, which may equate to being unemployed. More recent support for many elements of this model stem from a study conducted by Prabhu *et al.*, (2012) based on a sample of university students aged 17-27 years from China, Finland, Russia and USA. They also identify proactive personality and entrepreneurial self-efficacy as being positive contributors of entrepreneurial intention. Contributors to self-efficacy include education, prior experience, role models and social networks.

The relationship between educational levels and wage when employed is analysed by Poschke (2013) when considering entrepreneurial options. A sample of 6,111 were included, however the insights are limited as the maximum age of respondents was 22 years. However, early career stage is when key decisions are often made and the findings indicate the extremes of wage, rather than middle band incomes, are a strong indicator of entrepreneurial intention. Those previously on low wages report entrepreneurial activity, producing twice that of similar wage earners. Low level wage earners also indicate a greater level of discrimination in identifying good projects. In addition, this paper notes that low earners tend also to have a lower level of schooling. In relation to education, Poschke (2013) reveals different outcomes to other research and may reflect the American culture of entrepreneurship, where the data was collected.

Crant (1996) proposes that a proactive orientation indicates that individuals create their own environment and can be considered as a factor in intentional and direct change of current circumstance. The presence of proactivity is a reasonable indication of being drawn to entrepreneurial careers. According to Volery and Mazzarol (2015) entrepreneurship involves linking two conditions: the presence of viable opportunities, and the presence of enterprising individuals, which strengthens the view put forward by Crant (1996). The weakness of Crant's study is that the sample was higher education students and therefore the comment that education is positively related to entrepreneurship may be questionable. There is a similarity with the role model element of the Davidsson (1995) model, as those with an entrepreneurial parent are more likely to express entrepreneurial intentions. According to Ferreira *et al.*, (2012) the incorporation of insights from both psychological and behavioural approaches is a research problematic. They summarise psychological characteristics that may be associated with entrepreneurship as:

- internal locus of control;
- propensity to take risk;
- self-confidence;
- need for achievement;
- tolerance of ambiguity;
- innovativeness.

Potential behavioural factors identified by Ferreira *et al.*, (2012) include control, attitude, creativity and engagement in academic entrepreneurship programs. This research was also based on a sample of secondary school students aged between 14 and 15 years; subsequently the results are subject to significant variation as the sample matures.

Perceptions and actual ability are identified as a gap by Bayon *et al.*, (2015). The importance of this study is two-fold, first to encourage those with entrepreneurial ability and, second, reduce the potential for failed initiatives where the actual ability is not present. This has the potential to promote the overall quality of entrepreneurial activity within the economy. A key factor, similar to other studies, is the presence of confidence and how individuals think. Links to human capital theory with investments in education and training, which may support mastery experiences related to success in accomplishing tasks, are identified together with the need to occupy the role of founder and associated entrepreneurial demands. The findings of this comprehensive study suggest that a positive personal perception encourages the initiation of entrepreneurial activities and supports thinking to action.

Bayon *et al.*, (2015) argue that positive and productive individuals are what economies require to choose entrepreneurship in order to make greater social and economic contributions. This point indicates potential links with the proactive orientation identified by Crant (1996).

A number of entrepreneurial intention syndromes have been sourced, they include: eureka, if-only, misfit and moonlighter, identified by Birley (1996) and the unfriendly push and no alternative (Beaver and Jennings, 2005). These syndromes have some similarities to the properties identified in the newly conceived theory of green-fielding.

Very little work is traceable on the topic of inheriting despite the position of sole proprietorship lacking a legal personality (Gaffney-Rhys and Jones, 2013). This study highlights the advantages of pre-emptive rights despite the findings which suggest many entrepreneurs stated they did not like to think about dying, respondents were not ready, or believed they were too young. In order to amend these views, the use of stories to clarify experiences and draw on prediction and understanding, consequently refer to inherited knowledge, aiming to generate a collective prediction. This enables knowledge to be transferred from being in the head to being in the system and encourage continuity (Garcia-Lorenzo *et al.*, 2008). A similar concept depicts entrepreneurship as an evolving unit: “as a member of society passing on key genes to successive generations” (Breslin and Jones, 2012, p. 295) with a view to interacting in order to differentiate rather than replicate. This process is enabled through selecting for or against habits of thought, which are derived from habits of life, both of which are subject to revision on the basis of what will best support progress. As a result, niche construction is established in which an individual uses time and space to make alterations (Breslin and Jones, 2012).

There are also elements of evolution referred to by Misra (2012) who comments on the belief in endowed entrepreneurial DNA which has a never-say-die spirit, opportunity recognition acumen and in-charge body language. The theory of optimal foraging also makes reference to evolutionary aspects. Pyke (1984) has written extensively on this theory that is based on a number of assumptions, including an individual's contribution to the next generation, measured in genes or ideas respectively. The extent to which the heritable component of behaviour is learned or innate is also considered, along with the currency of fitness. Pyke (1984) bases the theory on diet, patch choice, departure rules connected with patch exits and central place foraging. Optimal foraging is achieved when maximum return is obtained from the forage, handling times are efficient and the rate of encounter is effective, leading to fitness currency. From a conceptual perspective, it is relatively straightforward to apply this theory to entrepreneurial intentions and subsequent success.

From the view point of making selections with regard to foraging, whatever the format of the forage, choice theory or revealed preference and incentive compatibility drawn from game theory also have relevance. Game theory is a tool for analysing interactions among multiple entities and incorporates behaviour, feelings, decisions and an interdependency insight (Blumentritt *et al.*, 2012). The payoff of a dominant strategy within game theory exceeds all others. This takes into account the clearly stated problem or situation, those involved, the prevailing conditions, the payoffs from the various choices and predictions. The complexities have clear relevance when evaluating entrepreneurial intentions.

Where circumstances are radical, entrepreneurial activity is characterised by uncertainty and potentially boundary crossing, factors which provide the lifeblood of new ventures, (Burke and Myers, 2007) but may experience a shortfall in the supporting area of knowledge intensity. These points are similar to those raised by Breslin and Jones (2012) and

the difficulties encountered when attempting to achieve a balance between creativity and routinization as being a major difficulty. Frustration with current roles, difficulties in adopting to systems, a reluctance to recognise authority and a perceived lack of progression (Gomezelj and Kušce, 2013) are suggested as potential catalysts for choosing entrepreneurship later in life. Whilst these views may have a negative perception, work place experiences also support the ability to recognise an opportunity as a result of longer personal insights into the origins of opportunity.

Overcoming difficulties when entrepreneurial activity may be involuntary is eased somewhat by the expansion of the service sector which characteristically possesses low initial capital requirements and low barriers to entry (Krasniqi, 2009). Further support originates from the presence of a prospector approach to strategy using the Miles and Snow model, which suggests a greater propensity to engage in opportunity seeking practices (O'Regan and Ghobadian, 2005). Personality influences that underpin prospecting include targeting, organizing and support (Kickul and Gundry, 2002) that enable, under exploited opportunities, to be identified in a unique way (Breslin and Jones, 2012). Imas *et al.*, (2012) focus on alternative thinking to create opportunities at the margins of society, using the concept of the barefoot entrepreneur where a better future is the aim. Much of the focus from this starting point is self-reliant, survival tactics where spirituality and defiance mechanisms are drawn upon.

Grey (2007) suggests the wisdom and experience of people approaching retirement is insufficiently utilised. Entrepreneurial activity provides an alternative to leisure and may become a practical necessity as inflation catches up during longer retirement periods. The routine of employment is no longer applicable and the income can be viewed as a shoring-up contribution. With increasing age, individuals have come to understand their own strengths and weaknesses (Baron *et al.*, 2013). An individual in this situation can cope with stressors associated with entrepreneurial set up issues that are eased as previous knowledge, skills and experience enable entrepreneurs to obtain business resources (Cruz *et al.*, 2012).

As a developing body of knowledge, the literature emphasises several contributing factors to entrepreneurial intentions which continue to be authenticated in newer studies.

### 3. Methodology

Details of the data sample are provided at the beginning of this section, followed by an overview of grounded theory, the methodology used to analyse the data.

The boundaries of the sampling framework, which complies with the technique of theoretical sampling are adhered to through delimiting to a manageable scale (Glaser, 1998). This study incorporates several strands in order to add to existing knowledge from which students or recent graduates were excluded, the sectors are listed in table 1 under the column headed 'Entrepreneurial Intention'. In terms of demographic profile the respondents were over 35 years of age.



Tab. 1: Sector and Sub-Category of Study Sample

Respondent	Entrepreneurial Intention	Sub-Category
1	Clothing for the Elderly	Butter-flying/need to
2	Frontier Vacations / Events	Inheriting/expected to
3	Beef rearing	Inheriting/expected to
4	Storage and retrieval facilities	Swan-singing/want to
5	Entertainment /Catering	Inheriting/expected to
6	Technology Solutions/Software Development	Swan-singing/want to
7	Gardening services /app based	Butter-flying/need to
8	The European Student Abroad	Butter-flying/need to
9	Community Activity	Swan-singing/want to

Source: Our elaboration

There are three emergent sub-categories. The first sub-category is choice and necessity, which is butter-flying/need to; second is those who were subject to enterprise inheritance, which is inheriting/expected to and finally, swan-singing/want to where an informed decision is made. Column three of table 1 lists the sub-categories of the respondents, making up the diverse theoretical sample of the study.

The respondents are all trading in the broad geographical area of North West England and North East Wales and this is acknowledged as a limitation of the study.

An overview of the procedures that are used in the generation of grounded theory form the remainder of this section of the paper.

Grounded theory is a general methodology with no theoretical perspective that can be used with any type of data and any theoretical concept. It is a concept indicator method that requires a search for latent patterns in the data being used (Glaser, 2013) which emerge when the analysis is pitched at an abstract, conceptual level. According to Griffiths (2013) the virtue of the method is the neutrality in terms of the approach to data to provide a bedrock and framework (Bryman and Bell, 2015) that generates the categories of the theory. Grounded theory is referred to by Denzin and Lincoln (2013) as a theory developed from successive conceptual analysis of empirical materials which is connected to the worlds of lived experience and can be used in everyday worlds.

Staying open to what can emerge during the grounded theory methodology presents various views, one being the suspension of knowledge and preconceptions (Glaser 2013). To illustrate the suspension of knowledge, the abstract concept of mental boxing is proposed. This requires the researcher to metaphorically close the lid on a body of knowledge for a period of time until the memo sorting and writing up stages are reached. Imas *et al.*, (2012) comment on respondents being knowledge-makers in their own right and the focus should be on the actual words, rather than on the super-imposition of the analyst's interpretation.



The seminal text for any grounded theory study is *The Discovery of Grounded Theory* written by Barney Glaser and Anselm Strauss in 1967. Within this text there is clarity that a grounded theory should enable prediction and explanation of data; to be useful in theoretical advances; be usable in practical applications and give control of situations. This tall order provides a perspective on behaviour to guide research. Clear categories are verifiable in the present and understandable from any viewpoint. In achieving these criteria the theory fits, works and has relevance to the subject matter being researched.

Jan Green  
Ben Binsardi  
Entrepreneurial  
intentions: a grounded  
theory of green-fielding

Generating a grounded theory requires the construction of “conceptual categories or their properties from evidence; then the evidence from which the category emerged is used to illustrate the concept”. (Glaser and Strauss 1967, p. 23). The theory is made up of categories and properties within a “systematic relationship between these two elements”. (Glaser and Strauss 1967, p. 36). A property is an element of a category, which in turn is a stand-alone element of the theory illustrated in a conceptual manner, indicated by the data, and not the data itself.

Glaser and Strauss (1967) urge the grounded theorist to incorporate diversity and levels to synthesise connections within the data. This is achieved through theoretical sampling which requires the analyst to jointly collect, code and analyse the data and then decide what data to collect next and from what source in order to develop the emerging theory (Glaser and Strauss, 1967). This is the process of constant comparison to enable integration, consistency, plausibility and retaining a closeness to the data during the coding process.

To complete the constant comparison cycle (Glaser and Strauss, 1967) requires four stages which are undertaken after each sample of data is collected and coded on a line by line basis. These processes commence with the comparison of incidents applicable to each category through establishing similarities or differences with previous incidents. At this stage a memo to capture thoughts should be written. A memo taps “into initial freshness” (Glaser and Strauss 1967, p. 107) of reflection, reduce conflict and reach conclusions.

Following comparison, the integration of categories and their properties occurs and involves notice and realization of “some related theoretical sense” (Glaser and Strauss 1967, p. 109). Delimiting the theory prevent overwhelming issues by removing non-relevant properties to reduce the theory to a small number of higher level concepts and supports the generalization of theory into other areas. This practice underpins saturation, a stage where if a further incident is only adding bulk, it is not coded as it adds nothing further to the theory.

At the writing up stage, the analytic framework forms “a reasonably accurate statement of the matters studied” (Glaser and Strauss, 1967, p. 113). Sorted memos are brought together under category headings with codes to reach theoretical completeness revolving around a core category, which has a preponderance of relationships with many other categories and properties (Glaser, 1998).

#### 4. Findings

By engaging in the practice of theoretical sampling, as an integral process, when generating a grounded theory the empirical data patterned out into three sub-categories, each possessing their own distinct conceptual properties. In presenting the grounded theory of green-fielding, the linear sequence belies the concurrent sequence of data collection and coding. The theory is then drawn together under the core category, which conceptually depicts the central concern-resolving behaviour of would-be entrepreneurs.

To clearly demonstrate the grounding of the theory, in the data, in vivo data fragments or respondent quotes are used. Where this is the case, italics have been used to clarify the source.

A grossly over-looked segment of entrepreneurial research is the UK aristocracy who find themselves in a position of inheriting a business, often in either unexpected or earlier than anticipated circumstances. On the surface this may appear an easy option, however the data suggests otherwise with references to accumulated debt, antiquated premises, outdated and inadequate organizational processes, poor human resource management and, in some cases, the prospect of substantial death duties, evidenced by: *"I had lots of taxes to pay and I had to work, I had no other means of supporting myself"*. The level and scope of entrepreneurial intentions demonstrates acute innovation, born of necessity where a sense of destiny, continuity and responsibility is deeply ingrained. This scenario generated the property of entitling in many instances to fulfil the aspirations of others and to provide for future generations, the data states: *"I was 13 when my father died and MD at 30"*.

Within the somewhat rarefied surroundings of old-established business ventures there remains an aura of tradition and tightly interwoven bloodlines that is conceptualised within the theory as draw-bridging to severely limit any potential for diluting, contaminating or fragmenting; the core assets are clearly viewed as requiring protection through *"I had to lend the company my pension money"*. In this type of situation *"don't be too arrogant to delve into every aspect"*.

A draw-bridge leads to a gateway and is capable of being raised or lowered to either accommodate or prevent entry, used as a means of defence ([www.ancientfortresses.org](http://www.ancientfortresses.org)). The metaphor of a draw-bridge was used by Ragsdell (2000) when employing rich pictures to illustrate dilemmas related to entry and exit.

In contrast, the behaviours within this sub-category that are clearly in evidence are a discerning awareness of the need to practice entrepreneurship through diversification when the draw-bridging techniques are attended to and there is a necessity to cross the defences and engage in a wider and more open context. Gerund examples from the data include *live stocking, corporate entertaining and shopping*. The intentions being two-fold; first to generate revenue that is profitable and second to exploit the doorstep unique selling points in a manageable manner which is conceptualised as regrouping in order to practise longer-term green-fielding. A final category is evident, as the absence of sound

planning being experienced leads to a decision, to practice the concept of reserving. This type of behaviour requires financial and legal acumen to ensure clarity for the next generation and originates from the data fragment: “I ploughed a lot back” and “I set-up share schemes” and “I’m never going to let this happen again”.

Inheriting as the sub-category is drawn together with references to: “it will be a different era” and “someone running a business who hasn’t planned for the future is leaving turmoil for others”. Culminating in the view that: “Complacency is a death warrant for the next generation”.

Within the second sub-category, *butterflying*, there is a saturation related to the search for the elusive elixir of wealth that has previously proved difficult to establish. Data fragments make reference to “*having no choice*”, the naming of the property. This is the view of the respondents and is a mental concept rather than physically factual, their view depicted as “*I was unemployable*”.

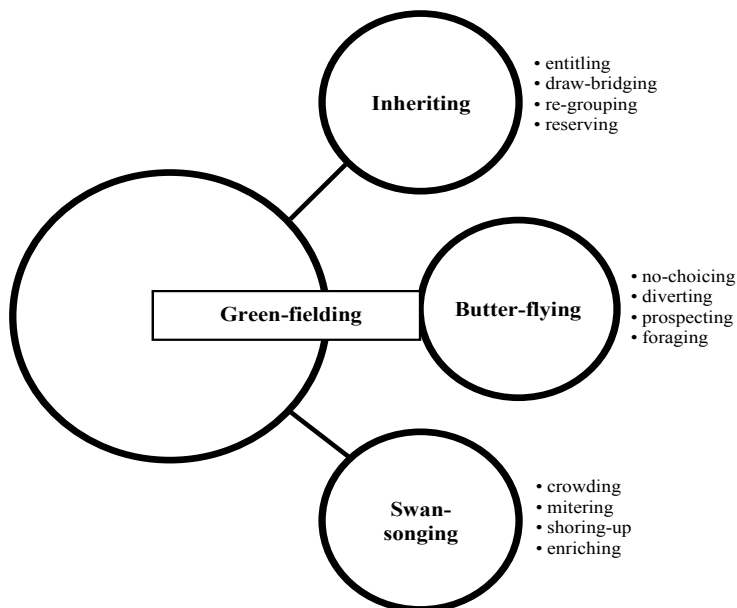
Respondents eligible for this sub-category relate to a fragmented series of economic activity, as several stints of routine work has proved unsatisfactory from a personal perspective and the data refers to quitting, frequently with little consideration for the consequences beyond the short-term abruptness. Attention is then diverted to other or new activities, which may be within a different sector and involve prospecting behaviour to ascertain possible future opportunities, which are relayed as being brief and suggest a quick-fix approach and evidence of limited tenacity, via “*it never quite made the grade*”.

This is required in order to provide sufficient revenue to sustain the basic foraging elements of living that require personal movement for survival and are viewed as being “*racked with difficulties*”. In addition, there is an increasing urgency as options reduce and “*it was desperate*” so that the view becomes “*it has to work*”. There is evidence of “*weak foundations*”.

There are occurrences of repeated behaviour by the respondents which is required due to the short-term nature of the efforts which disappoint and conceptually pattern out to depict the haphazard movements and intermittent hoverings of a butterfly. The activity requires “*going round the corner*” in search of yet more new pastures.

McCabe and Savery (2005) refer to the notion of *butterflying* that is similar to flitting from one flower to another, taking the nectar. This enables a personal build-up of expertise, competencies and knowledge. Butterflying may be diagonal, horizontal or vertical in direction.

Fig. 2: The grounded theory of green-fielding



Source: Our elaboration

*Swan-singing* is the third sub-category of the grounded theory where the data identifies several behaviours. A swan song is a metaphorical phrase for a final gesture, effort or performance of a person's career ([www.oxforddictionaries.com](http://www.oxforddictionaries.com)). Unsurprisingly, the demographic profile of respondents in this area of the theory was older than in the other two. The sub-category is populated with two properties; one being respondents who had pursued a successful corporate career and may have experienced a redundancy situation, the other populated by an opportunity to engage in a contracting situation or a bootlegging situation came to fruition.

The data makes reference to *"there was a cage above my head, it was full of lifers in there"* to describe a situation at the higher structural levels where selection, frequently repeated, has already occurred. In the traditional triangular shaped hierarchy there is limited availability at the top level, leading to crowding. In flatter organizations *"the gentle slope away from the centre is an organizational leakage"* both incidents conceptualise a movement away from a crowded centre, illustrated by: *"I felt I had enough about me to set up on my own"* and the concern resolving behaviour is *"I wanted to be at the summit"*.

*Mitering* evolved from the concept of abutting from a corner to provide *"a strong foundation"*, the opposite of butterflying that emanated from *"don't spend money you haven't got"* and being asked *"fancy coming along, there might be some work?"* which is the evidence of bootlegging. Mitering, as a concept, indicates good fit with other relevant aspects and the ability to withstand pressures.

One property is labelled shoring-up and this concept refers to financial needs where pension provisions are deemed to be insufficient, which is

addressed through “*living frugally*” or family finances require topping up to pay for education “*that hasn’t finished yet*” or care for others and the outcome is a period of “*getting by*”. Shoring-up adds conceptual triangulation when occurring with mitering.

Jan Green  
Ben Binsardi  
Entrepreneurial  
intentions: a grounded  
theory of green-fielding

It is clear from the data that this entrepreneurial activity has “*passion*” and an opportunity to ensure that “*learning never stops*” to make active use of a “*mind that is always ticking over*”. Enriching occurs in response to the “*temptation to do something was burning*” and “*the drive is there*”.

Again in the category of swan-singing is the need to be “*uncluttered*” and have “*a clear mind*” because “*ideas have been sitting in compartments*” and “*when you can jump in and be away, that is fantastic!*” The entrepreneurial feel is one of release to a sparsely populated place where ideas flourish.

Green-fielding is defined as an area of business that is completely new ([www.dictionary.cambridge.org](http://www.dictionary.cambridge.org)) and depicts a conceptual freshness where contemplation, ambition, aspiration and conviction have space in which to converge into a unique offering that is the foundation of entrepreneurial intention.

## 5. Discussion

Green-fielding contributes an additional segment of knowledge to previous work carried out in the area of entrepreneurial intentions. The theory conceptualises behaviours that reflect the changing expectations of the current workforce. Working patterns develop a complex intertwining of change and continuity in response to callings at various stages in life. An extensive search of the literature failed to reveal previous works linked to the concept of green-fielding, the references refer to sites or plots of land that have not been used previously for development. The notion of green-fielding depicts the desired outcome of entrepreneurial intentions, the development of an enterprise that has not previously emerged as a business; thus providing the potential for innovation.

There are several strands warranting emphasis at this stage. First is the desire to create an entity based on original, individual ideas and expectations with a view to generating new and different personal circumstances for the future, in the manner of an i-career. One source of this approach stems from individual quitting as a means of release from previous economic dependency, a link with previous literature where the presence of decision-making is evident. The i-career (Green, 2012a) is characterised by the individual taking charge of economic activity within the workplace in the manner of a micro-business, in contrast to a traditional employee or worker. Decisive mannerisms or proactivity (Crant, 1996) as opposed to a passive acceptance are evident within the i-career.

Other aspects which have been an international challenge in the last decade are economic (Davidsson, 1995) and future wage expectation (Poschke, 2013). Where these factors are critical, green-fielding contributes evidence through the sub-category of butter-flying which is derived from the properties of no-choicing and foraging. During periods of economic crises and job losses, the quantity of job vacancies has a tendency to reduce

and therefore limits future options. Given a widespread context of no-choicing in terms of jobs, an alternative direction is an entrepreneurial venture in order to provide the means of basic necessities, illustrated by the property of foraging.

Reflecting on these initial points, it is clear that green-fielding answers concern-resolving behaviour in addition to possessing relevance that adds to the body of knowledge.

Structured organizations are a relatively recent concept, originating in the Industrial Revolution as machines enabled mass production to take over from individual craft production. Whilst there were valid economic reasons for this industrialisation of life, with improved education, health and life expectancy comes personal questioning about the purpose of work and the ability of a traditional model to meet post-industrial expectations. It is clear from the data that this is not occurring and green-fielding could be given a harsher name of back-lashing against large corporations, globalization and structured team-working as a panacea for economic activity.

The grounded theory depicts a personal search, in various forms, for an individual approach, whether that is through inheritance, which is expected to, or butter-flying, which is needed to. Inheriting has a tendency to arrive in an earlier than expected manner and brings with it scenarios that Gaffney-Rhys and Jones (2013) have revealed. Inheriting also urges earlier actions to limit asset damage and the need to exercise draw-bridging during the entrepreneurial set-up stages. Where circumstances are such that generational succession is anticipated, highlighted in the property of entitling, issues may be complex and individual expectations diverse. The legal issues linked to inheriting will differ according to geographical location; however a viable economic unit is crucial for the purposes of continuity. To achieve this, entrepreneurial intentions may be based on the expectation of a contribution to society (Davidsson, 1995) and a requirement to pass on (Breslin and Jones, 2012).

Whilst the aristocrat may benefit from a higher-level education, this does not necessarily provide confidence related to the risk of failure (Bayon *et al.*, 2015) where alternative ways of thinking (Imas *et al.*, 2012) are required to evaluate potential opportunities. Green-fielding depicts these activities as re-grouping within the prevailing context, which may give rise to conflict if the presence of role models (Prabhu *et al.*, 2012) is of limited value and may also require the practice of reserving, also emerging from the theory. There is evidence of re-grouping in the green-fielding theory where aristocratic estates are being managed with an increasingly commercial and diverse focus. This activity responds to the weight of inheriting but substantiates the core-category as inheriting is a result of birth, the no-choice element of the theory is different. Regrouping may require diverting from previous practice to embrace the prospects of entrepreneurial opportunities and shore-up potentially weak foundations as a means of enriching future generations.

As grounded theory is not restrained by the literature, the concept of optimal foraging (Pyke, 1984), game theory (Blumentritt *et al.*, 2012) and prospecting strategies (O'Regan and Ghobadian, 2005) all underpin

the entrepreneurial quest for, as yet, untapped opportunities. The blend of green-fielding properties with these theories is supportive of survival and could conceptually relate to the popular operational management technique of lean manufacturing. In addition, it has the potential to generate new knowledge through the synthesis which would be derived by the merging and application of the two approaches.

Jan Green  
Ben Binsardi  
Entrepreneurial  
intentions: a grounded  
theory of green-fielding

Proposed as the first reference to butterflying, in the literature (McCabe and Savery, 2005), to indicate intermittent behaviour that is difficult to predict and short-term in nature, green-fielding also identifies these traits. Whilst butterflying behaviour differs from inheriting, the aim has similarities. Butterflying has two main strands, the first resulting from an imposed situation which may be a lack of suitable job opportunities or conversely a redundancy situation from an existing job.

As previous studies focus on the student population, the second point has not received extensive attention within the literature. Where an individual is in a challenging economic situation, the concept of foraging (Pyke, 1984) has relevance as there is a need to achieve a pay-off (Blumentritt *et al.*, 2012) for all choices. The rules of departure from a previous situation encourage the green-fielding concepts of prospecting and diverting from previous situations. Whilst the entrepreneurial intention literature includes economic issues (Davidsson, 1995; Poschke, 2013) and expectations of increased earning capacity, butterflying suggests an element of short-termism adapted by the ageing global population that is, in itself, presenting new, challenging situations to governments in terms of pension provision and the potential for social care provision. Legislation to remove a compulsory retirement age and perceived pension shortfalls has introduced social and economic rationales to continue workplace activity. Behaviours that are supportive of entrepreneurial activity, whilst potential changes of direction and future prospects are established, should prove beneficial. During this search phase the psychological traits of proactivity and self-efficacy will be tapped into.

Focusing purely on this area of entrepreneurial intentions could assist in reducing the number of start-up failures and financial hardship as a result of entrepreneurial ventures. In turn, this has the potential to provide a greater focus for government funding initiatives to be used more successfully and effectively. Furthermore, this could lead to additional opportunities for individuals who also want to, with a range of experiences and self-knowledge (Grey, 2007; Baron *et al.*, 2013), venture into new pastures when the prospect of immediate retirement is not welcoming.

Drawing on the sub-category of swan-singing, there are several issues of contemporary relevance. The theory identifies the opposite of no-choicing; in swan-singing there is a realisation of limited future promotion prospects and an ultra-competitive environment for any openings that may arise. With a strong skill base and current expertise, the swan-singer is able to practice transferability and take the skill base into a green-field situation which, when in place, also provides a financial shoring-up mechanism to enable pension pots to continue growing undisturbed for a longer period of time with the potential for greater returns. Whilst outside the scope of this study, there is also research to indicate that remaining economically active for longer has health benefits due to socialisation and retention of a structure to the day.



Governments and practitioners are recommended to ensure education and employment legislation that are both able to match the projectification of working patterns in line with i-career characteristics. This approach would support an alignment with the global expansion of the incidences of entrepreneurial activity being a major contributor to economic growth.

The concept of passing on entrepreneurial DNA is revealed as being far wider than inheriting. It stems from the far more fundamental desire to leave a legacy - and procreation within the field of business provides a tangible form of asset to bequeath. The over-riding concerns are to locate a metaphorical green-field space from which an entrepreneur is able to forage in an optimal manner to ensure the enterprise is fit to trade. The challenge for educators, governments and practitioners is to provide this type of environment, a legacy for the current cohort of incubating entrepreneurs where inventions, however born, whether necessity or otherwise, have an environment in which they are able to flourish and contribute to economic prosperity.

## **6. Conclusion and areas for further research**

Green-fielding theory has sufficient diversity that could be readily broken down further into three theories to provide additional depth and progression towards generalisation, as the data would originate from different and more focused or specific theoretical sampling. This research would probably generate new properties and categories and therefore provide additional insight. As indicated previously, drawing on lean techniques in conjunction with green-fielding is a novel approach to supporting entrepreneurial intention.

The conclusions drawn from the theory are that, whatever the starting point of the would-be entrepreneur, difficulties and challenges of varying degrees are usually encountered. As the embryonic entrepreneur is largely depicted in the literature as being proactive, confident and willing to take a risk, the realities of the entrepreneurial practice are somewhat different. Entrepreneurial ventures are clearly not a panacea of autonomy, increased income and freedom. Greater attention to the properties of green-fielding to provide support mechanisms is recommended. The support is evident in all three sub-categories, inheriting draws on re-grouping and reserving to evaluate business trends and maintain a foundation. Butter-flying uses the properties of prospecting, to check out potential and foraging for potential returns. Finally swan-singing builds on previous experience and expertise through mitring and shoring-up, which is also an approach to robust business foundations.

The focus of this paper is the entrepreneurial intentions and the early venture concerns and it is evident from the data provided in the introduction that this is a growth area. A logical area for further research would be to undertake further studies with a new sample drawn from individuals with entrepreneurial experience to establish the ratio of success to failure. The results would be of value to governments and



educators to re-evaluate the type of training provided to butterflying individuals who are in a no-choice situation.

Jan Green  
Ben Binsardi  
Entrepreneurial  
intentions: a grounded  
theory of green-fielding

Such is the contrast between butterflying and swan-singing that research to establish where and if cross-over between the two sub-categories occurs would generate further new knowledge and insight to support further entrepreneurial expansion and success.

Expanding the analysed sample and making a comparison between individuals from different countries belonging to the sub-categories of inheriting, butterflying and swan singing to establish geographical similarities and differences that originate from educational, economic and social/cultural aspects may also generate further insight and support the transferability of grounded theory as a useful methodology within this area.

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# How the founding team impacts the growth process of early stage innovative startups<sup>1</sup>

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## Abstract

**Purpose of the paper:** *The paper aims at analysing the process of startup creation at its very early stage, investigating the connection between the distinctive traits of the entrepreneurs (the so-called “founding team”) and the arising profiles of their new ventures.*

**Methodology:** *The data are collected during the determinative initial phases of the venture creation. Specifically, a cluster analysis is applied on a sample of 107 Italian innovative startups and their 254 founders. The three emerging clusters show significant differences in terms of entrepreneurial profile and the startup’s fundraising ability.*

**Findings:** *Some specific traits of the entrepreneurial profile of the new venture (mainly the educational background and previous experience), may have an initial imprinting effect on its firm profile and, hence, its likelihood to grow and be successful.*

**Research and managerial implications:** *Work and international experience appear to be crucial success factors for startups at the very early stage. These characteristics prove to be strong enablers of fundraising, which happens to be vital at this particular time.*

**Research limitations:** *A cross-country analysis should be performed to better understand the positioning of the Italian startup ecosystem, and to overcome the country specificities of the sample.*

**Originality of the paper:** *The novelty of this work is represented by the exploration of a population on which we have no great prior knowledge, in a significant, yet peculiar, phase of its life. There are not many empirical/qualitative updated works related to the analysis of the characteristics of Italian startups and their founders.*

*Key words:* entrepreneurship; startups; founding team; cluster analysis

## 1. Introduction

The positive impact that new venture creation has on economic growth, innovation and job creation has been proved (Audretsch, 2003). Entrepreneurs are responsible for the economic development through the introduction of innovative ideas, in terms of products, processes, markets and organization. In order to reach this goal, an entrepreneur must be able to successfully implement these innovations, which means to satisfy a (new)

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customer and thus, through job supply, provide economic growth. As stressed by Cuervo *et al.* (2010), the competitiveness of a country's firms, which determines the development of its wealth and dynamism, relies fundamentally on the capabilities of its entrepreneurs and managers. As reported by Reynolds (2004), the junction or "choice point" at which an individual decides to get into the startup process is influenced by three groups of variables, those related to individuals, their characteristics and personal background, to their motivations and cognitive features, and finally to the context or environment in which the process takes place. The output of the process, which is the possibility that the firm is born, develops and grows, or that it ceases, depends on each of these variables. Therefore, creating a new firm is not so simple. It takes different abilities, knowledge and skills, whose impact on the process may depend on the stage of its development (Klotz *et al.*, 2014). For this reason, and given the relevance of the phenomenon of new venture creation, this paper attempts to shed new light on the role played by the characteristics of the entrepreneur(s) in the very early stage of the abovementioned startup process. Thus, we think that the proposed cluster analysis may help in providing useful information on the process of new venture creation.

The paper is structured in four paragraphs. The following section provides a comprehensive review of the literature on entrepreneurial characteristics affecting the startup process. On the basis of the theoretical framework previously described, the third paragraph presents the research design and the methodology. The fourth section describes the analytical procedure and cluster profiles. The last paragraph discusses findings and provides concluding remarks and future research implications.

## **2. Literature review: the entrepreneurial profile and the startup process**

In prevailing literature, entrepreneurship is often linked to the discovery and exploitation of profit opportunities (March, 1991). In any case, as noted by Freeman (1982), firms do not arise spontaneously from opportunities in the absence of human action, but instead are founded through the exploitation of organizational efforts made by individuals. Decisions are made by individuals and are influenced by characteristics related to individuals. This is consistent with the more recent literature on the so called "personality approach/perspective" on opportunity identification, i.e. an individual's unique personality is assumed as the key driving force for entrepreneurial activity. Many authors distinguish entrepreneurs from other individuals by looking for particular cognitive traits, such as risk propensity, need for achievement and self-confidence (Brockhaus, 1980) in order to detect the individual traits that delineate the successful entrepreneur (Timmons and Spinelli, 1994). In particular, two factors are strongly related to the ability to identify new business opportunities: entrepreneurial alertness, i.e. a unique attitude to sense environmental variations and recognize related opportunities (Kirzner, 1978), and prior knowledge and experience (Shane, 2000). Aldrich and

Zimmer (1986) pointed out that a more comprehensive explanation for new firm creation would be that of specifying how individual experience affects the likelihood that people will found firms. Individual prior knowledge and experience could be considered to arise from work experience (Cooper *et al.*, 1994), as well as from education (Gimeno *et al.*, 1997).

Alberto Onetti  
Federica Pepponi  
Alessia Pisoni  
How the founding team  
impacts the growth  
process of early stage  
innovative startups

An organic attempt to systematize the field of entrepreneurship studies was made by the Entrepreneurship Research Consortium (ERC). The ERC demonstrated that in order to develop a representative portrait of entrepreneurial activity, individuals should be studied in real time, while involved in the startup process (Gartner *et al.*, 2004). By doing so, the ERC classified the main variables that affect new venture creation. The first group of variables is related to the individual's personal characteristics, such as: age, gender, race and ethnicity, region of residence and personal background (i.e. educational background, work experience and functional expertise). The second group is related to the entrepreneur's cognitive features, i.e. motivational drivers that lead an individual to choose the entrepreneurial career rather than others. As pointed out by Shaver (1985), the reasons for getting into a business (or not) matter, because they are generally considered as the basis of intentions. Extensive research examines a wide range of an entrepreneur's personality traits as predictors of entrepreneurial propensity and actions. Specifically, our focus here is restricted to age, level of education and previous experience at individual level. The variable age is investigated in almost every study on entrepreneurs' characteristics. In general, scholars argue that focus on opportunities decreases with age. Empirical research demonstrates that young adults have a stronger focus on opportunities than older adults (Zacher and Frese, 2011). Risk aversion as well as the adoption of responsible behaviours are likely to grow with age (Timmons and Spinelli, 2010). By contrast, to recognise an opportunity, a certain degree of domain-specific knowledge is required.

Educational level is one of the most frequently examined components of human capital since it helps entrepreneurs in recognizing (and exploiting) opportunities (Cooper *et al.*, 1994). The educational level attained by an entrepreneur in school and vocational training can be considered as a proxy for the knowledge acquired by the entrepreneur before initiating a startup (Rauch and Rijsdijk, 2013). Formal education shapes the knowledge, the skills and the perspectives that a person brings to task. Education is seen as providing the necessary cognitive skills to adapt to environmental changes (Hatch and Dyer, 2004) and to improve problem-solving capacity in general (Sapienza and Grimm, 1997). Furthermore, entrepreneurs may also leverage their knowledge and social contacts generated through the education system to acquire resources.

Entrepreneurs' prior work and entrepreneurial experience has been considered in many studies as a proxy for skills and competencies. Prior work experience takes into consideration years of work, corporate role and industry of employment. The number and variety of prior work experiences (Lazear, 2004; Dahl and Reichstein, 2007) are also important aspects. As regards previous entrepreneurial experience, studies often refer to "serial entrepreneurship", defined as the propensity to start up more than one company in one's life (Delmar and Shane, 2006, Presutti *et al.*, 2008) before



launching a successful business. Empirical evidence supports the idea that entrepreneurial startup experience increases the probability of venture success/survival (Dyke *et al.*, 1992). The required knowledge to make business decisions often arises from daily work experience that one has accrued in a lifetime. It has been argued that an entrepreneur with similar experience takes better decisions than an entrepreneur who lacks such experience.

Even though prevailing literature on entrepreneurship seems to be concentrated on the role of the individual entrepreneur, nowadays, innovative firms are more likely to be founded by teams rather than individuals (Gartner *et al.*, 1994; Beckman, 2006). Cooper and Daily (1997) found that successful high-growth firms are usually built around a team. Extensive research reported that team-founded firms have higher success rates, if compared to firms started by single founders (Ensley *et al.*, 2006). In particular, scholars have increasingly recognized the role played by founding teams/early founding teams/new venture teams (Ucbasaran *et al.*, 2003; Klotz *et al.*, 2014) in shaping the new venture in its early stages of development and growth. Research on founding teams has focused mainly on the impact that factors such as team members' basic demographic features and team composition, have on new venture performance. The relationship between founding team composition, i.e. heterogeneity vs. homogeneity, and firm performance despite being in-depth investigated, still remains a controversial issue (Hmieleski and Ensley, 2007). The way teams are formed (Klotz *et al.*, 2014) is crucial because it could affect the success rate of a startup. Team composition analyses the mix of individual's features (i.e. knowledge, skills and competencies). Colombo and Grilli (2005) provide evidence that there are synergistic effects originated by the presence of specific complementary capabilities within the founding team. A recent study by Fern *et al.* (2012) shows how some team members are chosen because they share the same past experience with the founders, while others are chosen to extend the founders' experience.

To sum up, Wright *et al.* (2007) assert that there is a lack of knowledge regarding how individuals and teams impact the effectiveness through which innovative ventures are created and subsequently grown. They also underline the central role played by individuals and teams in the development and growth of technology-based ventures. This is why studying the formation of startup companies means analysing the characteristics of their founders and the way these features affect the output of the entrepreneurial process, i.e. the "initial imprinting effect of the founding team" (Klotz *et al.*, 2014).

Furthermore, there are not many empirical/qualitative updated works related to the analysis on the characteristics of Italian startups and their founders, although this topic is of primary importance to understand the startup process. The novelty of this work is represented by the exploration of a population on which we have no great prior knowledge, in a significant, yet peculiar, phase of its life. Under this perspective, our work differentiates itself from other studies (Grandi and Grimaldi, 2003; Colombo *et al.*, 2004; Colombo and Grilli, 2010; Colombo and



Piva, 2012) mainly because of the analysis performed (no previous cluster analysis on the population of Italian startup/founding teams) and the target population (focus on a very early stage). In our analysis we try to collect knowledge on startups' characteristics during the very first steps of their lives, and not ex post. As reported by Foo *et al.* (2005), we know little about the early phases of teams engaged in new venture activities and the way variables as human capital affect team outcomes. The broad majority of researches on this matter are often performed when the venture has already been successfully formed. One major challenge of studying early entrepreneurship in the Italian scenario is, as reported by Colombo and Piva (2012), to find complete information and univocal estimates on the Italian population of new innovative ventures. This is due to the fact that most individuals who are defined as "self-employed" by official statistics are actually salaried workers with atypical employment contracts. On the basis of official data, such individuals cannot be distinguished from entrepreneurs that create new ventures (Colombo and Grilli, 2005). The effect of this work is represented by the exploration of a population that has been little studied so far, because of the already mentioned difficulties, and it is in a peculiar phase of its life. For these reasons it is very important to look at startups even when they are not yet fully incorporated or operative, to better figure out how they evolve and what are the characteristics driving this evolution.

Alberto Onetti  
 Federica Pepponi  
 Alessia Pisoni  
 How the founding team  
 impacts the growth  
 process of early stage  
 innovative startups

### 3. Research design and methodology

The core of this study is to explore the characteristics of Italian startups and of their founders, both as teams and individual entrepreneurs, since these topics appear to be the most critical factors, both for the startup process and for the company's development and growth (Ucbasaran *et al.*, 2003). We also focus on factors enhancing the development of the business idea and on team formation, analysing startups as a whole ("company specific factors") as well as single individuals composing the entrepreneurial team ("human capital"). In our work, we combine data profiling the new ventures with the aggregation at team level of the individual characteristics of team members (i.e. entrepreneurs). Throughout this union, we aim at identifying consistent clusters and the features that are significant for clusterization. To do this, we used dummy and categorical ordinal variables and we classified them using hierarchical cluster analysis. We ran the classification following a post-hoc or a no a priori technique, whose purpose is to define groups according to the data, as explained by Wedel and Kamakura (2002). In order to perform our analysis, we chose the method of cluster analysis, since it "...can provide very rich descriptions of configurations without over specifying the model" (1996, p. 442). As measure of proximity, we employed the squared Euclidean distance, and the hierarchical method was used to approach the analysis. Since we aim at producing an exploratory classification of observations, taking into account that neither the clustering variables nor the number and nature of the resultant groups are strictly linked to deductive theory, the chosen method to identify clustering variables was the inductive one. In fact, as suggested by Ketchen and Shook (1996), we tried to consider as many

variables as possible because it was not foreseeable what variables would differentiate among observations. Moreover, as reported by Punj and Stewart (1983), there are no clear guidelines to determine the boundaries of clusters. Therefore, the use of many clustering variables is expected to maximize the likelihood of discovering meaningful differences. Due to the fact that our sample of data does not contain outliers, we decided not to use standardization of variables. After transforming the non-ordinal categorical variables into dummy variables, we needed to correct multicollinearity of data by reducing from  $n$  to  $n-1$  the possible modalities that the variable can assume. We also performed several tests to assess that this operation does not compromise the quality of the information provided.

#### *Sample description*

The final sample is composed of 107 Italian innovative startups and 254 entrepreneurs, spread into the different founding teams. Data were collected by the Mind the Bridge Foundation (MTB), a non-profit (501 c3) corporation based in San Francisco, which through its business plan competition, scouts new business projects with a strong commitment to innovation and marked ambitions of growth.

As stated by Foo *et al.* (2005), using data of participants of a business plan competition can be quite useful and relevant (i.e.: identify teams engaged in the early stages of the entrepreneurial process; scout firms and founders characteristics and perform longitudinal studies, monitoring the phenomenon in a specific area or region). The questionnaire submitted to the founders of the startups, participating to the MTB Business Plan Competition, was designed on extant literature by MTB-CrESIT (Research Centre for Innovation and Life Science Management - University of Insubria). Data gathered contain information on the new venture, such as year of incorporation and place of establishment, sector, number of founders, business description and available market data and company investment profile (capital raised and typology of investors). Demographic information on the founders' and management's team includes date and place of birth, gender, education path, corporate role in the new venture, prior working experiences and prior entrepreneurial experience. The survey was administered in a computerized mode, using an online software. Answers were given on a voluntary basis and respondents could complete the questionnaire from June to July 2012. A small part of the received applications was discarded as being partially incomplete.

#### **4. Findings: analytical procedure and clusters description**

To perform our analysis, we chose a hierarchical algorithm, the Ward's method (Ward, 1963), as it is best suited for studies in which the number of observations in each cluster is expected to be approximately equal, and there are no outliers (Ketchen and Shook, 1996). Within our data

set, observations with similar entrepreneurial and firm characteristics are assigned into progressively larger endogenously determined clusters. The resulting “dendrogram” represents the dissimilarity among observations. With regard to hierarchical methods, in order to determine the number of clusters in a data set, we followed the basic procedure, as explained by Ketchen and Shook (1996), as there were no significant jumps in the agglomeration coefficients. To this end, we visually inspected the dendrogram and performed the cut off determining the number of clusters. Finally, to validate the clusters’ solution, we performed the cluster analysis using different algorithms and methods, as no meaningful clusters can be derived from the too small half-samples.

The findings of our analysis consist of three clusters, each one with its own characterization, and a set of variables that turned out to be significant for clusterization. Table 1 summarizes the distribution of variables included in the research model, as a percentage of the total. The level of significance of each variable is verified through a Chi-Square test. To calculate Chi-Square ( $\chi^2$ ), we used a cross-tabulation which shows the frequencies of joint occurrences between variables. We tested the significance using  $\alpha=0.05$ . There are five variables that are significant for the clusterization (p-value < 0.05), which are the following: (i) the startup has been funded ( $\chi^2 = 28.08$ ; df<sup>2</sup> 2; p-value 0.000); (ii) the amount of capital raised to date ( $\chi^2 = 85.979$ ; df 14; p-value 0.000); (iii) at least one co-founder has one previous job experience ( $\chi^2 = 17.942$ ; df 2; p-value 0.000); (iv) average number of previous job experiences, as an aggregate of the team ( $\chi^2 = 35.344$ ; df 4; p-value 0.000); (v) average years of previous job experience, as an aggregate of the team ( $\chi^2 = 52.584$ ; df 12; p-value 0.000).

**Alberto Onetti**  
**Federica Pepponi**  
**Alessia Pisoni**  
 How the founding team  
 impacts the growth  
 process of early stage  
 innovative startups

*Tab. 1: Clusters specification and variables distribution*

	Clusters		
Variables as a percentage of the cluster	1	2	3
Cluster Distribution ( <i>excluding cases = 0,9%</i> )	19.5%	50%	29.6%
<b>Startup Description</b>			
Life Science Industry	0%	2%	0%
Consumer Products Industry	0%	6%	3%
Web based Industry	48%	52%	59%
ICT Industry	14%	28%	28%
Electronics Industry	14%	2%	3%
<i>Number of Founders:</i>			
1 Founder	24%	22%	22%
From 2 to 3 Founders	57%	65%	56%
From 4 to 5 Founders	19%	13%	22%
<i>The average age of the team is:</i>			
From 18 to 24 years old	10%	0%	3%

2  $df = \# \text{ of categories} - 1$

Startup Funding Profile			
The firm has raised funds	71%	44%	100%
Total amount of funds raised to date:			
From € 0k to 0,9k	29%	56%	0%
From € 1k to 10k	38%	22%	0%
From € 10.1k to 25k	10%	13%	3%
From € 25.1k to 50k	14%	9%	19%
From € 50.1k to 100k	10%	0%	25%
From € 100.1k to 200k	0%	0%	19%
From € 200.1k to 500k	0%	0%	25%
More than € 500k	0%	0%	9%
Co-founders are the main source of funding	57%	33%	47%
Relatives and friends are the main source of funding	5%	2%	0%
Banks are the main source of funding	0%	2%	9%
Other companies are the main source of funding	0%	0%	3%
Angel investors are the main source of funding	5%	4%	13%
Super angel investors are the main source of funding	0%	0%	6%
Foundations are the main source of funding	5%	0%	3%
Accelerators are the main source of funding	0%	0%	6%
Venture capitals are the main source of funding	0%	0%	6%
Startup Foundation Drivers			
Team met during Graduate studies	29%	17%	19%
Team met during Ph.D. studies	5%	19%	6%
Team met at work place	43%	46%	50%
Team met because of family connections	5%	17%	6%
Team met because of friends	38%	31%	38%
Team met in other ways	19%	17%	19%
<i>The source of the business idea was/were:</i>			
Bachelor's Degree	29%	9%	9%
Master's Degree	33%	13%	25%
Ph.D. studies	0%	7%	13%
Research activities	19%	31%	22%
Working in the industry	43%	54%	59%
Other	14%	22%	9%
Team Aggregate Profile			
At least one co-founder lives abroad	10%	13%	9%
At least one co-founder was born abroad	5%	11%	13%
At least one co-founder is a woman	14%	20%	16%

From 25 to 34 years old	57%	43%	56%
From 35 to 44 years old	24%	50%	31%
From 45 to 54 years old	5%	7%	6%
More than 54 years old	5%	0%	3%
At least one co-founder has a Bachelor's degree	81%	61%	75%
At least one co-founder has a Bachelor's degree in Engineering	33%	11%	16%
At least one co-founder has a Bachelor's degree in Business Administration	14%	20%	28%
At least one co-founder attained Bachelor's degree abroad	5%	7%	3%
At least one co-founder has a Master's degree	43%	69%	69%
At least one co-founder has a Master's degree in Engineering	14%	17%	13%
At least one co-founder has a Master's degree in Business Administration	14%	26%	31%
At least one co-founder attained Master's degree abroad	0%	11%	13%
At least one co-founder has a Ph.D.	14%	17%	13%
At least one co-founder has a MBA	0%	7%	9%
At least one co-founder attained Ph.D. abroad	0%	4%	6%
At least one co-founder attained MBA abroad	0%	2%	3%
At least one co-founder has a patent	0%	4%	6%
At least one co-founder has a previous job experience	71%	100%	94%
<i>Average number of previous job experiences:</i>			
Less than 1	76%	13%	16%
From 1 to 2	19%	33%	38%
More than 2	5%	54%	47%
At least one co-founder had one job experience abroad	14%	33%	31%
<i>Average years of job experience:</i>			
Less than 1 year	52%	0%	9%
From 1 to 3 years	24%	6%	6%
From 4 to 7 years	19%	24%	34%
From 8 to 11 years	5%	33%	28%
From 12 to 17 years	0%	20%	13%
From 18 to 25 years	0%	11%	6%
More than 25 years	0%	6%	3%
At least one co-founder had one previous entrepreneurial experience	48%	41%	38%
<i>Total number of previous entrepreneurial experiences:</i>			
No previous one	52%	59%	63%
1 previous experience	10%	17%	6%
2 previous experiences	24%	15%	22%
3 previous experiences	10%	6%	6%
4 previous experiences	5%	4%	3%

**Alberto Onetti**  
**Federica Pepponi**  
**Alessia Pisoni**  
How the founding team  
impacts the growth  
process of early stage  
innovative startups

The following Table 2 summarizes the characteristics of the three identified clusters. The clusters' profiles show significant differences in terms of entrepreneurial profile (mainly educational background and previous experience, also at international level) and in terms of startup fundraising ability (amount and source of funding).

*Table 2: Clusters summary*

	Techno entrepreneurs - 1st generation startups (19.5%)	Employees turned entrepreneurs - Born into crisis startups (50%)	Proven entrepreneurs - Scalable startups (29.6%)
Entrepreneurial profile	Technical background  Startup is their first work experience  Prior entrepreneurial attempts  Scarce managerial background  No prior job experience	Several previous job experiences  Long career as employees  Low entrepreneurial attitude	High level of education  Solid managerial background  Prior job and entrepreneurial experiences  International experience
Firm profile	Mainly funded through Bootstrapping  Business idea originated during the educational path	Limited ability to attract funds  Business idea originated within work environment	Outstanding ability to raise capital and attract structured sources of funding

Source: our elaboration

According to the distinctive features characterizing the identified clusters, we titled Cluster 1: Techno entrepreneurs - 1st generation startups; Cluster 2: Employees turned entrepreneurs - Born into crisis startups and Cluster 3: Proven entrepreneurs - Scalable startups.

*Cluster 1: Techno entrepreneurs - 1st generation startups*

“Techno entrepreneurs” are young entrepreneurs with a prevailing technical background and no prior job experience. In the majority of cases, techno-startuppers are young adults whose first job experience is represented by the creation of a startup. These entrepreneurs are, as suggested by Sheehy (1976), in their “trying twenties”: a particular “stage” representing the time of opportunity where all things seem possible. In other cases, they are research fellows with a technical profile. Some

of the latter declare previous entrepreneurial experience, although more likely via academic spin-offs rather than startups per se. The companies created by techno-startuppers (that we define as “1st generation startups”) raise funds mainly from co-founders (57%). The average amount of capital received is quite small, comprised between 1 and 10 thousand euros (38%). Some peculiar traits of these founders may explain why these startups raise limited funding. These include weak managerial background and almost no prior work experience that may compromise their ability to attract more structured sources of funding. Furthermore, young entrepreneurs face greater difficulties in fund raising (especially from institutional investors) compared to their elder peers (Ierapetritis *et al.*, 2010; Cannone *et al.*, 2014). 24% of founding teams are pretty lean. These ventures operate mainly in high-tech fields. Not surprisingly, the inspirational source of their business idea is represented primarily (62%) by the educational path undertaken by the co-founders, which is also often responsible for their team formation at an academic institution.

Alberto Onetti  
Federica Pepponi  
Alessia Pisoni  
How the founding team  
impacts the growth  
process of early stage  
innovative startups

#### *Cluster 2: Employees turned entrepreneurs - Born into crisis startups*

Founding teams within this group are formed by individuals mainly coming from more conventional job positions. In fact, as reported by recent studies published by Italian Chambers of Commerce, with the advent of the financial crisis many people who lost or were unsatisfied with their jobs reinvented themselves into startuppers (a sort of “career pivoting”). This explains why among these teams we find individuals with a high level of job experience and long employment tenure. For these reasons, we decided to label them as “Employees turned Entrepreneurs”. In many cases, individual achievement acts as a trigger in the decision of such individuals to become entrepreneurs. This is consistent with prior research, which argues that some employed individuals are likely to start new ventures for two main reasons (Johnson *et al.*, 2004). They are people with low job satisfaction related to their current jobs or they are people whose job satisfaction is a stronger predictor of life satisfaction. Thus, the need for independence and for self-recognition may turn into a strong push to become self-employed. The companies created by these employees-turned-startuppers are what we define “Born into crisis startups”. Within this cluster, startups show a limited ability to raise capital (only 44% of them received external funds). The co-founders’ background is responsible for the low entrepreneurial attitude characterizing these startups. The prior work environment plays a critical role in this group, being the main source of inspiration of the business idea. Note that in 20% of the teams there is at least one female co-founder.

#### *Cluster 3: Proven entrepreneurs - Scalable startups*

Proven entrepreneurs are highly educated and experienced. This group is characterized by the highest level of education: 13% of the founders have a Ph.D. and almost one out of ten has a MBA. They have strong managerial background (more than half of them have a degree in Business Administration) and are quite experienced. Almost all of them present

prior job experience and 38% a previous entrepreneurial experience. Such percentage may look a little small. In fact, we believe that teams involved in these startups are driven and motivated by a precise and structured entrepreneurial idea, which explains why they are so good at fundraising. Furthermore, these founding teams present a broad international experience, as 31% of the co-founders had at least one job experience abroad and 25% attained a degree in a foreign university. The work environment (50%) represents the most common place for future co-founders first meeting. This could mean that after they met and developed the business idea, which has quite varied origins, into an effective business model (Onetti *et al.*, 2012), they decided to become full-time entrepreneurs. Co-founders are characterized by different sources of specific knowledge, performing a good balance between technical and managerial skills. This seems to be a successful ingredient not only for the exploitation of the business idea (Colombo and Grilli, 2005), but also for enhancing team performance on the long run (Steffens *et al.*, 2012). Evidence of this success is provided by the high amount of funds raised by these startups. Thus, we called the founders of such startups “Proven Entrepreneurs”. We define the companies that originated by these teams as “Scalable Startups”, since these ventures have greater efficacy in raising capital and, therefore, higher chances to succeed. All of them were successful at fundraising, and more than 30% raised more than 200 thousand euros (50% more than 100 thousand euros). They were able to attract funds from structured sources such as seed funds, foundations, accelerators and venture capitalists.

## 5. Discussion and conclusion

Based on the cluster analysis described above, we identified three clusters. Some general considerations emerge. The degree of fundraising is significantly different among clusters. The first cluster displays scarce variety among the sources of funding and a reduced ability to obtain medium-large amounts of capital. The second group also shows limited abilities to raise capital. The companies included in the third cluster present, instead, an outstanding ability in raising money. The level of job experience of the founders fairly varies among groups. Teams of the first cluster are characterized by a low level of experience, both in terms of number of prior jobs and years of employment. The second group includes a sample of firms whose founders show longer work experience. The third cluster displays a high level of job experience and a stronger international attitude. These results are supported by literature. In fact, Shane and Khurana (2003) affirm that differences in career experience lead to differences in evaluations, by potential entrepreneurs themselves and by others, of an entrepreneur's ability to: (i) access resources that help entrepreneurs in starting organizations; (ii) adapt to the role of the entrepreneur; (iii) continuously adapt the business model to market needs/changes.



Therefore, previous work experience is the key in both venture creation and fundraising. Scholars argue that individual career experiences are positively related to the ability of obtaining resources (Haveman and Cohen, 1994; Shane and Cable, 2002). Furthermore, Shane and Khurana (2003) point out that one of the founders' harder tasks is to convince others to reallocate resources in non-traditional ways. They state that if individuals are successful in their prior careers, they will be more likely able to convince not only potential investors, but also employees and other stakeholders. The characteristics of the entrepreneurial team as a whole are also relevant for the final output.

These findings are quite interesting, as they remark how work and international experience are crucial success factors for startups at the very early stage (as are those participating in a business plan competition). Actually, these characteristics prove to be strong enablers of fundraising, which happens to be vital at this particular time, allowing startups to get off the ground and consequently grow. In addition, our findings support the argument, inspired by competence-based theories, that founders' capabilities and knowledge are a key driver for startups growth. Innovative firms, founded by individuals who have a higher level of work experience, show superior growth, with everything else equally contributing (Colombo and Grilli, 2005). Moreover, Colombo and Grilli (2005) asserted that startups established by such individuals are more likely to obtain venture capital financing, which of course has a sizeable positive effect on their growth. The latter relationship is clearly visible in our results as well. Founders of firms belonging to cluster 3 present, in fact, qualified international working experiences, contributing to the ability of their startups to attract huge amount of funds from various sources.

With regard to further research, we identified two directions that, in our opinion, appear to be especially promising. First of all, recent studies (Klotz *et al.*, 2014) suggest examining how the characteristics of the firm are influenced by the team composition and stage of development. For instance, firms and teams features may differ from the idea of the evolution phase to the exploitation phase. From the results presented in this work, it seems clear that team characteristics drive the startup evolution at a very early stage. Further analysis could highlight how those features may differ as the company reaches a later stage of development and fundraising is no longer the primary need. In addition, a cross-country analysis should be performed to better understand the positioning of the Italian startup ecosystem, and to allow overcoming the country specificities of the sample that may lead to results that are not fully generalizable. Since accounting for the role of individuals in the startup process is critical for advancing theory, a cross-country comparison of entrepreneurs/new venture team samples may represent stimulating challenges for future research.

Alberto Onetti  
Federica Pepponi  
Alessia Pisoni  
How the founding team  
impacts the growth  
process of early stage  
innovative startups

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Alberto Onetti  
 Federica Pepponi  
 Alessia Pisoni  
 How the founding team  
 impacts the growth  
 process of early stage  
 innovative startups

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**Alberto Onetti**  
**Federica Pepponi**  
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 How the founding team  
 impacts the growth  
 process of early stage  
 innovative startups

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# The role and potential of social networks sites in tertiary education

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## Abstract

**Purpose of the paper:** Social Networks Sites (SNSs) are becoming very popular among students and constitute a promising field for tertiary education evolution. This research aims at assessing the usage of social networks for educational aims and at evaluating the perception of university students towards this kind of usage.

**Methodology:** Methodologically, the paper rests on an extensive, comprehensive and comparative theoretical research on the subject, as well as on primary research involving the in-depth survey of 125 university students in Northern Italy.

**Findings:** The findings underline the importance of utilizing SNSs to improve educational communications, sharing of information, student-student and student-educator interaction, efficiency, polyphony and more. The research also stressed the need for SNS adoption to be specific and in accordance with both student and lecturer attitudes, competences and limitations, as well other therein specified stakeholders and added values.

**Research limitations:** this is an exploratory study based on a sample of moderately limited size and, although generically valuable, it focuses specifically on Northern Italy.

**Implications:** the present research, in addition to its practical applications, may be extended to the academic faculty and to an analysis, based on a wider sample, of the underlying motivators that inhibit students and faculty from adopting SNSs for educational purposes.

**Originality/Value of the paper:** although literature on SNSs in education does exist, studies on university students' attitude towards SNSs are scarce and contrasting. This research sheds light on this still underexplored, yet increasingly important subject by descriptively aiding the comprehension of SNSs for educational purposes, while prescriptively indicating advisable courses of action.

**Key words:** social networks sites (snss); student perceptions; student attitudes; student behavior; educational tools; tertiary education

## 1. Introduction, aim and structure

Well into the twenty-first century, the tertiary education sector, like every other sector, industry and organization, is trying to adapt to an incessantly changing external and internal environment (Thrassou and Vrontis, 2011). Technological, social, economic and customer behavior developments (Chebbi *et al.*, 2013) are pushing universities and colleges across the globe to develop, adopt or adapt new approaches, philosophies, processes and systems, in order to successfully fit into this new reality and research in education carries, perhaps, the greatest weight that it has in decades.

Social networks sites (SNSs) such as Myspace, Facebook, Twitter, etc. - increasingly used by consumers in order to search for information, communicate and share knowledge (Pantano *et al.*, 2010) - are becoming increasingly popular means of communication among university students, primarily due to their interactive and multidimensional features. After teaching and learning through educational modes such as m-learning or e-learning, interactivity and cooperation among students, as well as between students and teachers, without the confines of physical space are now possible throughout SNSs, allowing them to save time, risk-taking and monetary costs (Asabere, 2012). SNSs show progressively more sophisticated characteristics (Gandolfo and Lupi, 2014; Pace *et al.*, 2014) and most of them operate on a free service model based on advertizing revenues. Even if SNSs are attractive to educational institutions, they are prevalently commercially driven, albeit the result of an adaptation by educators and application builders (Weber, 2012). In any case, engaged learning in an online environment can be challenging for students, professors and administrators.

An important factor in the promotion of SNSs is the development and maintenance of social capital (Leafman *et al.*, 2013). The extensive use of social networking by students provides a great opportunity for educational researchers and an insight into the online behavior and preferences of learners (Hamat *et al.*, 2012). SNSs offer several resources and services such as messaging, blogging, group discussion, etc. and students are avid users of these sites (Haneefa and Sumitha, 2011). These sites could be an important tool for educational purposes, given that every day, through them, millions of people share information and resources and initiate communication and collaboration (Eteokleous and Ktoridou, 2011); moreover, they are user-friendly, student-centered and student-controlled (Bowers-Cambpell, 2008).

Even if the last few years have witnessed an increasing interest in using social media/social learning (Vernuccio *et al.*, 2015; Madge *et al.*, 2009) along with online courses, the actual educational functions are still limited and not developed to their full potential. Despite SNSs being a focus of discussion in various academic fields (Antonelli and Corrado, 2014; Galano and Marchigiani, 2013; Golder *et al.*, 2007; Pempek *et al.*, 2009, Hamid *et al.*, 2009; Pempek *et al.*, 2009; Eteokleous *et al.*, 2012), few studies have investigated their educational aims (Selwyn *et al.*, 2008; Schwartz, 2009) and almost none of them have evaluated the perception of university students within this scope. Most researches focus their attention on the real usage of SNSs by students and on their impact on their academic performance. For instance, Lee and McLoughlin (2010) consider SNSs useful for learners and instructors to present themselves socially in an online environment and connect with one another (Wheeler *et al.*, 2008). Many researchers however, have found that technological innovations should be accompanied by pedagogical enhancements for technology-rich interventions to be successful (Mishra and Koehler, 2006; Doering and Veletsianos, 2008; Veletsianos, 2010). Researchers have also carried out studies to assess the impact of SNSs on their users, showing how excessive usage causes psychological, physical, interpersonal



and educational problems (Suhail and Bargees, 2006). At the same time, education practitioners and theorists have begun to explore how SNSs can be used to describe and prescribe new paradigms for communication, learning and education (Abdelraheem, 2013). Al-Fahad (2009) shows how offering mobile learning could be our method for improving the retention of students by enhancing their teaching/learning.

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

Despite the rich literature on this topic, studies on students' attitude towards SNSs are limited and contrasting. This research builds the foundation necessary to bridge this literature gap by assessing the usage of social networks for educational aims and evaluating the perception of university students towards this kind of usage. The research focuses on the higher (tertiary) education sector and specifically on a university in Northern Italy. Methodologically, the research rested on an extensive literature review and the qualitative study of 125 university students. The first part of the paper is devoted to the definition and understanding of SNSs, their educational purpose and the attitudes of students towards them. The second part investigates their implementation towards educational purposes and the relative evaluation of the perception of university students towards them. In the context of the latter, the paper identifies the main potential consequences on the educational system to subsequently define and prescribe a new integrative framework of analysis and development. The paper concludes with some preliminary directions towards a value-based analysis that will ultimately refine and define SNSs-facilitated education.

## 2. Literature Review

### 2.1 Social network sites' definition and background

Every day millions of people use social networks (Pantano *et al.*, 2010) like Facebook (Conti and Carriero, 2014), Twitter, LinkedIn, etc. (Antonelli and Corrado, 2014) in order to create profile pages and groups with common interests, they socialize, upload pictures, videos, music, etc., leading the sites to involve an increasing number of people (Eteokleous *et al.*, 2012). As maintained by Kord and Wolf-Wendel (2009), they are part of youth's daily experiences and particularly attract young people (Hamid *et al.*, 2009) also because of their interactive and multidimensional characteristics. As a matter of definition, it is noted that user profiles or the ability to post comments on other users' content are not sufficient features to make a website a SNS. The latter term refers to websites that enable users to articulate a network of connections of people with whom they wish to share access to profile information, news, status updates, comments, photos, or other forms of content (Steinfeld *et al.*, 2012). Social network sites are defined by Boyd and Ellison (2008, p. 211) as "web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system". Boyd and Ellison (2007) also denote three essential components of SNSs: a user constructed public or semipublic profile, a set

of connections to other users within the system, and the ability to view one's own list of connections, as well as the connections made by others in the system.

Even if very recent, SNSs have their own interesting history. The first SNS, called SixDegrees, was created in 1997 and allowed people to create profiles, list their friends and, since 1998, to surf their friends' lists: this attracted a lot of people, but failed to become a sustainable business, leading to the site's closure in 2000. In the 1997-2001 period, several community tools (i.e. AsianAvenue, MiGente, BlackPlanet) started to support various combinations of profiles and publicly articulated friends, with a real wave of SNSs occurring in 2001 with the launch of Ryze.com that helped people leverage their business networks. Subsequently, in 2002, Friendster was launched as a complement to Ryze (Cohen, 2003), helping friends meet each other, but its servers and databases were not able to handle its rapid growth. Starting from 2003, several SNSs were launched - among which MySpace - obtaining great success and diffusion in 2004, especially among teenagers. This was the same year of the creation of Facebook, which was at first a Harvard-only SNS but then expanded to other universities and then globally (Boyd, 2008). Some SNSs personalized and/or customized their users' online communication: for example, LinkedIn is characterized as a SNS for professional contacts, while Facebook and MySpace have developed reputations for having a more 'open' nature with a large number of members who seek to contact users with shared interests or educational backgrounds (Ellison *et al.*, 2007).

There are several studies that focus on the use of social network sites by young people. While some researchers analyze their use among undergraduates, graduates and faculty or college members (Golder *et al.*, 2007; Pempek *et al.* 2009), others focus their attention on even younger people, aged 13-14 years old (Mikami *et al.*, 2010). The purposes of these studies on social network sites have also varied: some researchers analyze how SNSs encourage sociability (Keenan and Shiri, 2009) while others (Pfeil *et al.*, 2009) investigate age differences and similarities in the use of SNSs. Boyd (2008) studied how users construct online identities, manipulate SNSs profiles, and how certain aspects of profiles are capable of influencing friendship formation and others' impressions of SNSs users.

Ali (2012) identified their positive and negative effects and several other studies investigated the profile of users of SNSs and their underlying motivators and exhibited behaviors. For example, Young *et al.* (2009) studied this aspect in order to determine why and to which extent users are keen on posting their entire identity by sharing pictures and videos, etc.; while Hampton (2011) found that women use SNSs more than men to communicate and exchange information. Other researchers studied users' structure of friendship (Kumar *et al.*, 2004) while Gross and Acquisti (2005) investigated crucial aspects connected to SNSs, such as information revelation and privacy. Gross and Acquisti (2005) also investigated into the topic of privacy, which is the extent to which SNS users reveal personal information; and others analyzed the structure of the networks themselves (Hogan, 2008; Liben-Nowell *et al.*, 2005).

More recently, researchers have begun to show interest in their educational intent. Oradini and Saunders 2008 in fact, found that SNSs engage students in learning activities and communities through technologies which are familiar and accepted by them. This research joins this stream of research to investigate students' perception towards the usage of SNSs for educational purposes.

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

## 2.2 The educational role of social networks

The use of SNSs by students provides a great opportunity for educational researchers; the latter are becoming increasingly employed in the educational context and many educators are already exploring ways in which these tools can be used for teaching and learning (Ranieri and Manca, 2013; Selwyn *et al.*, 2008; Schwartz, 2009). The perception of students towards the usage of SNSs for educational purposes is a topic of both high knowledge value and in need of exploration. The use of SNSs appears to increase the sense of belonging among university students. Dorum *et al.* (2010) show how SNSs are associated with positive attitudes towards the academic, social and personal aspects of students' life; a most important association, especially for students who are not well integrated into the university and at high risk of dropping out. Furthermore, SNSs, and in particular Facebook, are used by students to manage group projects, coordinate meetings, chat and message about homework (Ellison, 2010). Typically, students at the University of North Carolina prefer debating on Facebook versus using the standard course management system and list pre-existing familiarity and user experience as key factors (Stutzman, 2008). Selwyn (2009) shows how students discuss five main themes through SNSs: recounting and reflecting on the university experience, exchange of practical information, exchange of academic information, displays of supplication and/or disengagement and "banter". Additionally, most students declare that a Facebook page would facilitate their learning, by means of increased interaction with students and instructors, and notifications for course information (Irwin *et al.*, 2012).

Mazer *et al.* (2007) observe good performances from SNSs users in terms of effective learning, which has resulted in a positive learning climate among students. Madge *et al.* (2009) found that 53% of the students who participated in a survey were positive regarding the use of Facebook for teaching and learning, as long as the focus was on administrative matters. Furthermore, Keenan and Shirii (2009) explored how SNSs encourage friendliness through the use of Facebook, Twitter and LinkedIn. On the contrary, other authors (Karl and Peluchette, 2011) concluded that many students feel uncomfortable with becoming friends with teachers and they aren't so keen on dealing with teachers through SNSs for educational purposes because they consider these to be a social space (Madge *et al.* 2009).

With regard to the usage of SNSs, research has found that SNSs have great potential to improve learning and sharing of information among learners and teachers (Ferdig, 2007; Maloney, 2007; Pence, 2007; Simoes and Borges Gouveia, 2008), with detailed evidence on students using SNSs for informal learning (Mazman and Usluel, 2010; Vivian and Barnes,

2010). Yu *et al.* (2010) suggested how social networking of university students with peers and professors could be a way to obtain information, knowledge, social acceptance and support. In the same way, Kosik (2007) noted that students use Facebook for academic purposes, particularly to connect people and to get information about assignments; while Chu and Meulemans (2008) found that SNSs are used in order to communicate with other students about school, instructors and courses. Professors could use Facebook to facilitate instructor-to-student and student-to-student course communication, manage class projects, answer questions, etc. (Abdelraheem, 2013). Furthermore, some authors (Daalsgard, 2008; Madge *et al.*, 2009) sustain that SNSs are used both as a “social glue” that helps students familiarize with other students and deepen the knowledge of their interests, ideas etc., and as a potentially useful tool for promoting effective academic practice. Hamid *et al.* (2009) propose a detailed literature review on the educational activities facilitated by SNSs, showing how most literature has focused on content generation, while not so much is understood about how SNSs could be used to share, interact and socialize (Table 1).

Tab. 1: SNS literature

	Online social networking			
Social Technologies	Content Generating	Sharing	Interacting	Collaboratively socialising
Blogs	(Sandars and Schroter, 2007) (Hargadon, 2008) (Churchill, 2009) (Murray, 2008)		(Churchill, 2009)	
Wikis	(Ras and Rech, 2009) (Sandars and Schroter, 2007) (Hargadon, 2008) (Kane and Fichman, 2009) (Murray, 2008)	(Kane and Fichman, 2009) (Ras and Rech, 2009)		(Kane and Fichman, 2009) (Sandars and Schroter, 2007) (Ras and Rech, 2009) (Rhoades <i>et al.</i> , 2009)
Photo sharing	(Sandars and Schroter, 2007) (Hargadon, 2008)			
Video sharing	(Sandars and Schroter, 2007) (Hargadon, 2008)		(Mason and Rennie, 2008)	
Podcasting	(Sandars and Schroter, 2007) (Minocha and Thomas, 2007) (Hargadon, 2008)	(Sandars and Schroter, 2007)		
Social bookmarking	(Sandars and Schroter, 2007)	(Eysenbach, 2008) (Churchill, 2009)		
Online discussion board	(Hemmi <i>et al.</i> , 2009)			(Wuensch <i>et al.</i> , 2009)
Instant messaging	(Sandars and Schroter, 2007)			(Sandars and Schroter, 2007) (Mason and Rennie, 2008)
Social Networking Sites	(Murray, 2008) (Virkus, 2008) (Sandars and Schroter, 2007) (Hargadon, 2008)	(Murray, 2008) (Oradini and Saunders, 2008)	(Murray, 2008) (Minocha, 2009)	(Murray, 2008) (Supe, 2008) (Oradini and Saunders, 2008)

Conversely, several researchers are skeptical towards the use of SNSs for educational purposes (Oliver and Goerke, 2007); Kennedy *et al.*, 2008; Kumar, 2009). Several studies have found how university students use SNSs prevalently to communicate with family and friends, to spend time, for entertainment (Sponcil and Gitimu, 2012; Sheldon, 2008) and mainly for social purposes (Boyd and Ellison, 2007; Lampe *et al.*, 2008; Madge *et al.*, 2009). Kirschner finds that the use of SNSs could lower a student's grade, a position shared by Enriquez (2010) who declares that *"the problem is that most people have Facebook or other social networking sites, their e-mails and maybe instant messaging constantly running in the background while they are carrying out their tasks"*. Additionally, Szwelnik (2008) finds that students express their unease at the idea of their instructors being present in what these students consider their 'private personal space'. In essence, it is questionable whether students are willing or able to use them for teaching and learning or not, even if they are familiar with SNSs.

The true nature of the effectiveness of SNSs for educational purposes therefore is clearly debatable. It is however quite clear that the potential at least does exist for SNSs to promote cooperative learning; but this must be developed through empirical testing on university students.

### 3. Research Methodology

The research aims at (1) investigating the usage of SNSs for educational purposes and (2) evaluating the perception of university students themselves towards this. To carry out these tasks, the research involved 125 university students aged between 18 and 35, recruited between October 2013 and November 2013 in Northern Italy. Similar efforts were made in the past by researchers who, however, generally focused their attention on the academic usage of SNSs (Zanamwe *et al.*, 2013; Hussain *et al.*, 2012) or on the perception of students towards them (Al-Fahad, 2009; Dorum *et al.*, 2010).

The choice of exploring only the perception of students of this age range is dictated by the fact that this range of population is the one using SNSs most easily and will de facto represent a growing segment for educational purposes, assuming SNSs are indeed able to satisfy such needs.

The number of questionnaires (125) constitutes a representative sample for this partly exploratory research, necessary for developing an in-depth understanding of the perspective of university students. The sample is made up only of students (as opposed to faculty or administrators) as natural consequence of the focus of the research and because of the need to understand if SNSs would be accepted and considered valuable to the subjects themselves, before proposing them. The research is qualitative and based on a structured questionnaire which allows the emergence of the true motivators underlying the use of SNSs for educational purposes. The respondents were university students that were actively involved in the process of learning at the time and with knowledge of such tools.

The questionnaire comprises five main sections. The first describes the general data of the respondents, and the second investigates their individual usage of social networks for educational purposes by means of 7 closed-ended questions. A similar survey has been also carried out

by Hussain *et al.* (2012) in order to examine the academic use of social media. The third section seeks the respondents' evaluation in order to draw future strategies; and the fourth includes a 5-point Likert Scale (Likert, 1932) evaluation of 17 items structured on 4 main dimensions: learning, commitment/motivation, communication with classmates, and communication with professors. With regard to the latter section, a similar questionnaire, based on students' attitudes and perceptions regarding these tools, has been used in the past by Al-Fahad (2009); and another one (7-points Likert scale) has been used by Dorum *et al.* (2010) to measure the students' sense of belonging to SNSs. Brady *et al.* (2010) also used this type of questionnaire (albeit with different items), as did Barcelos and Batista (2013) who used a 5-points Likert scale in order to analyze the difficulties and advantages of the use of the Internet and Social Networks in teacher education programs.

The last of the five questionnaire sections rests on open-ended questions regarding the present and potential importance and usefulness of social networks for learning purposes. A similar questionnaire was used on the other perspective (teaching) by Bicen and Uzunboylyu (2013) in order to find out how Facebook and Web 2.0 tools create a positive effect when used in education and to investigate teachers' opinions about the online learning environment. The questionnaire proved to be a suitable tool for the measurement of this variable: in fact, it shows a high validity of content and reliability, emphasized by a high level (0.894) of Cronbach's Alpha resulting in a high level of the internal consistency of the scale used with the sample of reference. Table 2 presents the sample's characteristics.

Tab. 2: Sample demographics

	Percentage
Students' gender	
<i>Male</i>	40%
<i>Female</i>	60%
Students' age	
<i>18-20</i>	10.4
<i>21-23</i>	49.6
<i>24-26</i>	36.8
<i>27-30</i>	2.4
<i>Older than 30</i>	0.8
Employment/University	
<i>Only Student</i>	92.5%
<i>Public employee</i>	1.7%
<i>Private employee</i>	1.7%
<i>Unemployed</i>	0%
<i>Other</i>	4.1%

Source: Research elaboration

The research design, as well as the elaboration of its findings, was further developed by considering its strategic marketing environmental context. This last one pertains also to theories on new product development, reflexivity and related and consequent organisational works (Vrontis *et al.*, 2010, 2011, 2012; Thrassou *et al.*, 2012).

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

#### 4. Primary research findings

The acceptably completed questionnaires (125) were analyzed through SPSS 19.0 suite. The first study - in addition to the participants' general information - is based on the frequency analysis of the usage of social networks for educational purposes by university students.

With regard to the first objective of the paper (investigating the usage of SNSs for educational purposes) results show how most university students (61%) use SNSs for this purpose almost 1-3 times a week and, in terms of usage, the first place is covered by Facebook (87.2%) followed by YouTube (4.8%), MySpace (1.6%) and Skype (1.6%) (Tab. 3).

The main usage of these tools by university students is reserved to the interaction of pairs (Tab. 4): they use SNSs in order to interact with other classmates (prevalently to get help on academic matters, 48.4%) and to contact their classmates to arrange for group discussions (23.8%). As regard interaction with other students/professors, SNSs are considered useful in exchanging information about exam rules (36%) and in discussing class assignments (32%). University students think that SNSs facilitate their learning given that they increase interaction with professors and fellow students (28.7%) and allow them to participate in general discussions about course topics (38.3%). Interaction with professors is a critical point because students found a lower utility in interacting with them (very or extremely important only in 43.3% of cases); with messages (39.2%) and chats (30%) being the main functions.

The second part of the questionnaire is based on the evaluation of perceptions of university students towards SNSs for educational purposes (Figure 1, 2, 3, 4) and it is evident that the highest levels of agreement (that is the highest percentage of agreement at levels 4 and 5) is registered by two items relating to communication with classmates: "*I can share and solve my doubts through social networks*" (54.9% at levels 4 and 5) and "*Through social networks I can participate in group discussions about lectures, projects, exams*" (46.3% at levels 4 and 5) (Tab. 5). The first also shows the highest average level of agreement (3,546).

Tab. 3: Usage of Social networks for educational purposes (first part)

	Percentage
Use of SNSs for educational purposes	
<i>Never</i>	8.9
<i>Only once</i>	3.3
<i>Once per year</i>	0
<i>2-6 times per year</i>	7.3
<i>Once per month</i>	9.8
<i>2-3 times per month</i>	9.8
<i>1-3 times per week</i>	40.7
<i>Every day</i>	20.3
Most frequently used SNSs	
<i>MySpace</i>	1.6
<i>Facebook</i>	87.2
<i>Skype</i>	1.6
<i>Friendster</i>	0
<i>Hi-5</i>	0.8
<i>Flickr</i>	0
<i>Blog</i>	0.8
<i>YouTube</i>	4.8
<i>Classemate.com</i>	0
<i>Bebo</i>	0.8
<i>LinkedIn</i>	0
<i>Twitter</i>	0
<i>Other</i>	0.8
Why do you use social networks for informal learning?	
<i>To get help from my professors on academic subjects</i>	5.7
<i>To get help from my classmates on academic subjects</i>	48.4
<i>To contact my classmates to arrange for group discussions</i>	23.8
<i>To submit work/assignments to my professors</i>	2.5
<i>To contact my classmates to discuss academic work</i>	18
<i>Other</i>	1.6

Source: Research elaboration



Tab. 4: Usage of Social networks for educational purposes (second part)

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

	Percentage
How do social networks facilitate your communication with your classmates/professors?	
<i>By discussing class assignments</i>	32
<i>By exchanging info about examination rules</i>	36
<i>By exchanging notes</i>	19.2
<i>By asking professors for information</i>	10.4
<i>Other</i>	2.4
How do social networks facilitate your learning?	
<i>They increase interaction with professors and fellow students</i>	21.7
<i>Participation in general discussions (with professors/students) about course topics</i>	38.3
<i>They allow me to ask for/receive information in real time from professors</i>	18.3
<i>They let me know about the availability of lecture notes and assessment parameters</i>	20.8
<i>Other</i>	0.8
How useful have you found them when trying to contact your lecturers?	
<i>Extremely</i>	8.3
<i>Very</i>	35
<i>Somehow</i>	36.7
<i>Just a little</i>	19.2
<i>Not at all</i>	0.8
Which function of social networks have you found most useful to contact your lecturers?	
<i>Chat</i>	30
<i>Messages</i>	39.2
<i>Events</i>	4.2
<i>Notifications</i>	8.3
<i>Comments</i>	17.5
<i>Friend requests</i>	0
<i>Photos</i>	0
<i>Other</i>	0.8

Source: Research elaboration

The highest levels of disagreement are registered with regard to the “Communication with Professors” and “Learning” dimensions. The most negative peak is obtained by the item “I interact better with my professor through social networks” for the former dimension (70.5% at levels 1 and 2

and an average level of agreement by 2.106) and “*Using the social networks enhances my interest in the subject*” (with an average level of agreement of 2.299) for the last one.

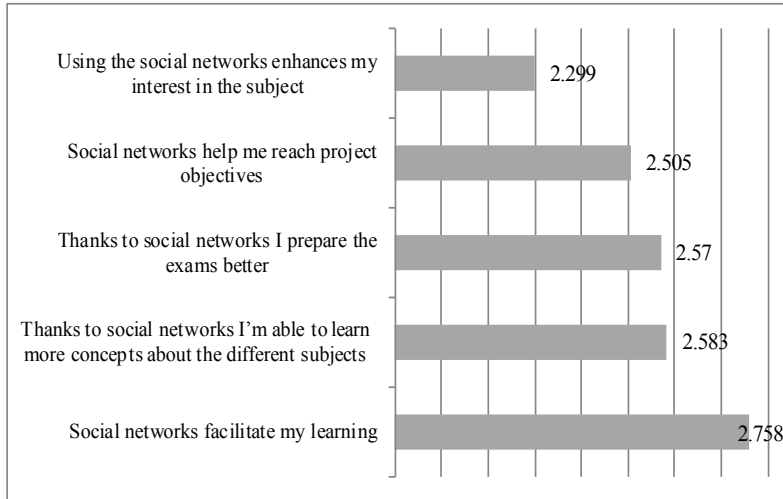
*Tab. 5: Evaluation of perceptions of university students towards SNSs for educational purposes*

	1	2	3	4	5
1. Learning					
Social networks facilitate my learning	10.7	32.2	34.7	14.9	7.4
Thanks to social networks I'm able to learn more concepts about the various subjects	13.2	33.9	38	10.7	4.1
Thanks to social networks I better prepare for my exams	24.2	22.5	30	19.2	4.2
Social networks help me reach project objectives	20	30.8	30.8	15	3.3
Using social networks enhances my interest in the subject	20	44.2	25	7.5	3.3
2. Commitment/Motivation					
I enjoy using social networking tools for educational purposes	16.4	42.6	26.2	12.3	2.5
I would like a higher usage of social networks for educational purposes by professors	10.7	24.6	31.1	21.3	12.3
I'm more interested in committing to course activities because of the use of social networks by professors	14.9	33.1	30.6	16.5	5
3. Communication with classmates					
Social networks increase my creativity and interactivity with the class	10.8	24.2	38.3	20.8	5.8
Through social networks I can participate in group discussions about lectures, projects, exams	2.5	16.5	34.7	37.2	9.1
Through social networks I learn more about my classmates	8.3	18.2	28.1	35.5	9.9
I can share and solve my doubts through social networks	4.1	9.8	31.1	36.9	18
Online discussions help me develop a sense of collaboration with the class	6.7	20	38.3	26.7	8.3
4. Communication with professors					
I interact better with my professor through social networks	36.1	34.4	16.4	9	4.1
Through social networks I can get more information from my professors in less time	21.3	39.3	21.3	14.8	3.3
Communication between students and professors through these tools enforce their relationship	19.7	35.2	29.5	12.3	3.3
Social networks allow me to know my professors better	21.7	28.9	32.5	12	4.8

Source: Research elaboration

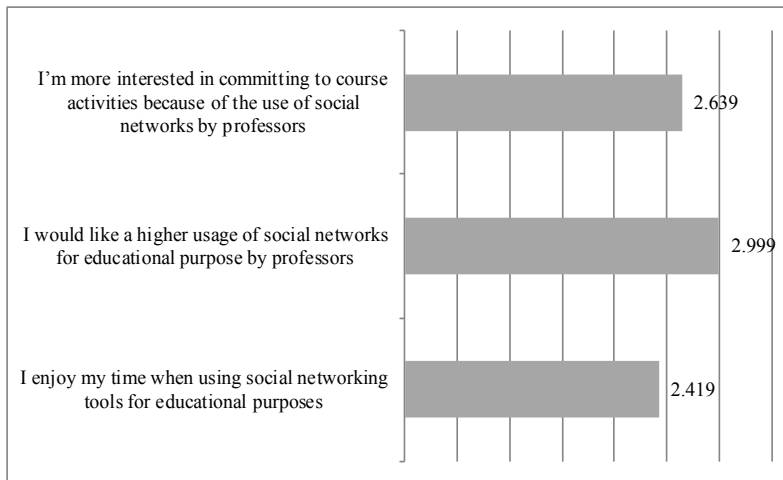
*Fig. 1: Evaluation of perceptions of university students towards SNSs for educational purposes – Learning*

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education



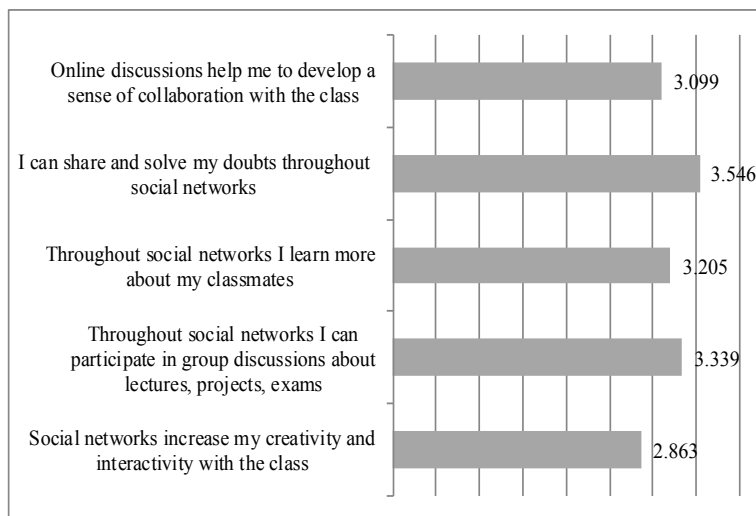
Source: Research elaboration

*Fig. 2: Evaluation of perceptions of university students towards SNSs for educational purposes – Commitment/Motivation*



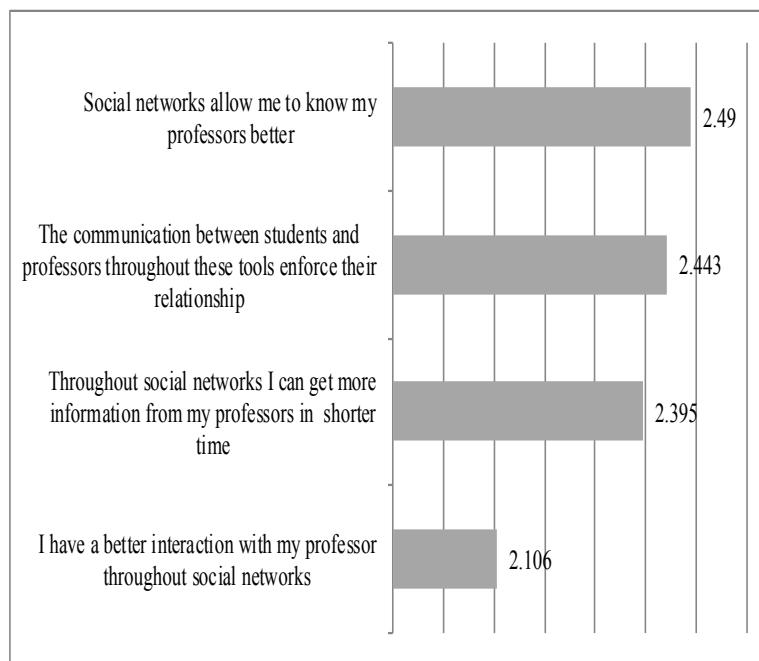
Source: Research elaboration

*Fig. 3: Evaluation of perceptions of university students towards SNSs for educational purposes – Communication with classmates*



Source: Research elaboration

*Fig. 4: Evaluation of perceptions of university students towards SNSs for educational purposes – Communication with Professors*



Source: Research elaboration

Despite the great diffusion of the use of SNSs, the analysis shows students' scarce interest in adopting them for educational purposes, or better, they consider SNSs as tools to interact with their classmates, but do not use them for learning or interacting with their professors.

Lastly and significantly, university students expressed their opinions regarding the main advantages and disadvantages of SNSs, emphasizing their unsatisfied needs and suggesting important possible future innovations/uses of social networks for learning purposes (see subsequent sections).

## 5. Results' elaboration and findings

The results of this research confirm the increasing diffusion of the usage of SNSs among university students (Selwyn *et al.*, 2008; Schwartz, 2009).

In fact, with regard to the first objective of the paper (investigating the usage of SNSs for educational purposes), there is a widespread usage of these (61%) for educational purposes with a predominance of Facebook, which has become the most popular SNS in the world (Mazman and Usluel, 2010), recognized as a respectable e-learning platform (Bosch, 2009).

Despite the several possible usages of SNSs, this paper emphasizes a very important result: university students use them only for limited aspects and in particular to quickly interact (prevalently via chat) with their pairs/classmates (e.g. to get help and to arrange for group discussions). In particular, the most used functions of SNSs are those allowing students to interact better with other classmates in order to discuss and share doubts and information like in the case of messages (39.2%) and comments (17.5%).

This confirms the results of a corresponding study by Hussain *et al.* (2012) who observes how university students use SNSs to share their learning experiences and research findings, get updated information and develop academic networks. Similarly, Kosik (2007) found that students use Facebook for academic purposes, particularly to connect people in their classes, and to get information about assignments. Chu and Meulemans (2008) found that the majority of students on a graduate program used both Facebook and Myspace to communicate with other students about school, instructors and courses.

With regard to the way SNSs can facilitate students' learning, the highest number of interviewees underline the importance of their participation in general discussions about course topics (38.3%) while scarce results are obtained with reference to the utility of SNSs in the interaction of university students with professors. In fact university students found SNSs "somehow" (35%) or "just a little" (19.2%) useful to contact their lecturers. Results confirm the position of Kosik (2007) and Chu and Meulemans (2008) on the use of Facebook by students and, more generally, SNSs to connect with people in their class and get information, but their interlocutors are mostly other students and not professors.

With regard to the second objective (evaluating the perception of university students themselves towards SNSs for educational purposes) this research underlines another important result. It identifies a positive attitude of students towards the use of SNSs for educational purposes, but only in

relation to their interaction and communication with their classmates and only when limited to particular aims such as discussion (46.3% of agreement at levels 4 and 5 and an average level of agreement of 3.339), and the sharing of doubts (54.9% at levels 4 and 5 and an average level of agreement of 3.546); this is expressed in the study carried out by Hussain *et al.* (2012).

Another noteworthy fact is that the only item which doesn't collect positive results regarding communication with classmates is "*Social networks increase my creativity and interactivity with the class*". This trend has also been observed in the pilot study for platforms for social interactions. Students therefore only use these tools to satisfy their needs (share doubts, discuss and get information). At any rate, students accept to use SNSs for educational purposes only when communicating with peers who are considered to be part of their social circle, while they exclude professors/lecturers from it, thus confirming the results of previous studies (Hamat *et al.*, 2012).

In fact, contrary to important contributions that emphasize the high potential of SNSs of improving learning and sharing information among learners and teachers (Ferdig, 2007; Maloney, 2007; Pence, 2007; Simoes and Borges Gouveia, 2008), interviewees expressed a degree of reservation/skepticism towards learning and communication with professors.

The highest level of negative perception is registered by the item "*I interact better with my professor through social networks*" (70.5% at levels 1 and 2). This shows a certain reluctance to use SNSs in order to interact with professors, thus confirming the results of another important study carried out by Chu and Meulemans (2006) who noted students' unwillingness to communicate with professors via SNSs and indicated that e-mails were considered a more appropriate means to communicate with faculty members. In any case, the use of SNSs was found to be uncorrelated with an increase of interest by students towards the subject.

Our analysis shows that "*communication with classmates*" was the only dimension that met the needs of university students, conversely underlying a scarce perception of their usage for different purposes. This should initiate a debate on the possibility of extending their use to improve communication between students and professors.

Overall, these findings show that SNSs for educational purposes have already naturally started to develop in this representative Italian university, but also that significant and well-targeted efforts should be made to ensure their further development.

Furthermore, the study shows also a balance (of benefits and disadvantages) of SNSs' development. The former include: better interaction with other students, the possibility of contacting people to ask questions '24/365', better preparation for exams, communication efficiency leading to saving time, the ability to elaborate on topics of individual courses and, in some cases, the ability to contact lecturers directly and more rapidly without waiting for office hours and outside of normal and confining structured procedures. Collaboration, time-efficiency and varied viewpoints are the same benefits identified by

Brady *et al.* (2010). Moreover, it is apparent that, as other sectors have seen, the use of internet-based innovations can reduce some of the competitive disadvantages of smaller organizations in both local and international contexts (Thrassou and Vrontis, 2008; Thrassou *et al.*, 2009; Tardivo *et al.*, 2014).

Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

On the contrary, among the several disadvantages of SNSs, students identified the possibility of losing time because of the distractions they may pose, as well as their non-educational role. This is corroborated by Pierce and Vaca (2008) who noted that some uses of SNSs could be an additional distraction that influences grades negatively. They also noted the negative effect of the circulation of wrong or unofficial information through SNSs, their lack of privacy and, in some cases, the technical problems related to relying on internet-based educational tools. These were included in the findings by Kwan *et al.* (2010) who sustains that although the internet and SNSs are common sources for information among college students, they are not perceived as credible sources. An enhancing factor of the latter phenomenon is the lecturers' frequent inability or unwillingness to use such tools and their consequent limited contribution to them. In fact, despite the enormous potentialities of SNSs for educational purposes, many educators blame social media, such as Facebook, for the lack of quality in their students' writing (Abdelraheem, 2013). A final negative effect of SNSs' role is the gradual limitation of direct contact among students and between students and educators.

Another interesting finding of this research relates to students' corresponding and expressed unfulfilled needs of SNSs. Most need to interact with and quickly receive information from their lecturers, who however often do not use SNSs. This occurs in spite of the fact that SNSs (and in particular Facebook) have the capacity to support course management activities, enhance the provision of information and resources for students, as well as commit and motivate students through interactivity and collaboration (Naidu, 2005).

The final set of findings relate to students' suggestions/improvements regarding SNSs' use. Firstly, they prefer a greater use of SNSs by lecturers who, in their opinion, should post lessons on YouTube, as well as forums and groups on Facebook where they can answer students' questions. Secondly, they support the greater use of SNSs by the university to act as a bridge between the university and employers. Thirdly, it would be desirable the use of SNSs for university students of common country/national background. Fourthly, the development of a platform to facilitate the continuous interaction between students and professionals, for educational purposes would be very useful. Finally, the students favor the creation of a single page for each course where everybody can add information and important documents. These of course are only students' beliefs on how SNSs may improve their educational experience so they are not necessarily true. However, what emerges is that, from the students' perspective, SNSs are capable of contributing educationally in additional ways compared to the existing ones.

## 6. Concluding elucidations. A value based perspective and further research

By integrating suggestions from innovation management, educational tools and communication management perspectives, and combining them with its own primary findings, the present study has identified an increasing usage of SNSs by young people. This segment is proportionately growing in size and importance with time, and evidently constitutes a logical investment ground for the immediate future for tertiary education establishments.

Investment in SNSs for education however should not be 'blind', in the sense that not all SNSs' apparent potentialities are necessarily transcribed into true added value for educational purposes. The primary limiting factor, as in most industries and sectors, is the consumers (Thrassou, 2007) themselves (the students) whose attitudes and corresponding behavior ultimately define the scope and nature of useful SNSs' contribution. In particular, in the field of education, the study has identified that SNS use is especially valuable for interaction among students for direct and indirect educational purposes. The corresponding interaction between students and educators is quite limited owing to the lecturers' inability and/or unwillingness to engage in this and/or the students' apprehension in allowing their lecturers to 'invade' their personal cyberspace. These in fact (especially the former) are areas in which investment can be made. As regards student attitudes, the study also notes their rather negative stand concerning three dimensions (learning, commitment, communication with professors). This should be researched further to uncover the underlying motivators and potential subsequent investments to correct potentially erroneous compunctions.

By holding a wider perspective on the subject, the study finally must underline an erroneous anomaly of the current system. On the one hand we (essentially) have a generation of SNS users, who have in fact already incorporated SNSs in their everyday life. On the other hand, we have an educational system that largely relies on communication means to achieve its goals and yet is still largely unmoved by SNSs' educational potential. The anomaly does not lie in the contradiction per se, but the fact that through educational technology-based communication advancements, the greatest challenge has always been to teach educators and especially students to appreciate and use them. In the case of SNSs, most students and many educators are already familiar with these 'new' means, they accept them and are willing to use them. The task at hand for educational institutions is to adopt the system and processes that will maximize its value for all stakeholders.

This brings the present study to its last, but probably most important, elucidation: in order for the SNS-facilitated education to be viable and offer its best service, the offered *value* must be *comprehensive*. This does not relate to the multiplicity of its potential benefits (which are of course a self-evident goal), but to the need for SNS-facilitated education to add value to all stakeholders, in particular in an international context (Vrontis and Papasolomou, 2005). This means that further research should:



1. identify and comprehend the role of all the stakeholders who are involved in this effort;
2. define the potential benefits (added values) of the new value chain;
3. interrelate values with stakeholders to understand the system elements whose adoption will maximize the gains of the system both individually and comprehensively.

As far as *stakeholders* are concerned, simply and simplistically considering the two sides of 'the university' and 'the students' is not just inadequate, rather, it is probably setting the wrong scientific foundation to understanding the complexities and intricacies of the forces involved. To this end, this study proposes a more accurate breakdown of stakeholder groups to include:

1. tertiary education establishments such as *academic* units;
2. tertiary education establishments such as *business/economic* units, even for non-for-profit establishments (Vrontis *et al.*, 2007);
3. the tertiary education establishment's *educators* as a group with individual and potentially separate attitudes and interests;
4. *students*, who could be subcategorized depending on educational criteria;
5. social/public groups that directly or indirectly affect education;
6. governmental and regulatory groups that directly or indirectly affect education;
7. others.

Even this preliminary list of stakeholders indicates the degree of complexity of balancing the interests and benefits of all subjects. Regarding the potential *gained values* that need to be considered, they preliminarily include:

1. economic benefits through efficiency;
2. economic benefits through disintermediation;
3. economic benefits through personal interaction limitation;
4. qualitative benefits through better communication and access to information;
5. marketing and public relations gains through establishment status upgrade;
6. product, usage and status upgrade of used individual SNSs;
7. others.

As a concluding remark, the present study states that *education cannot remain impervious to the social and technological developments that characterize the very people it is supposedly helping. SNSs have already been extensively adopted and adapted by individuals, businesses, organizations, industries and sectors across the globe successfully and with significant benefits. Tertiary education shall inevitably follow, but it must occur at the right pace, in the right way and for the right reasons.*

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Demetris Vrontis  
Milena Viassone  
Alkis Thrassou  
The role and potential of  
social networks sites in  
tertiary education

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# Wine web 2.0: digital communication and tourist netnography. Opportunities for new entrepreneurship<sup>1</sup>

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## Abstract

**Purpose of the paper:** *The paper aims to examine online communication of wine tourism destinations and their users in order to identify strategic approaches potentially suitable for the development of:*

1. *new web communication formats;*
2. *innovative entrepreneurial formulae that meet the expectations of increasingly demanding and expert customers.*

**Methodology:** *These aims are pursued by means of various methods:*

- *official wine tourism destination websites were investigated with the use of the text mining technique;*
- *wine tourists' online discussions were analysed with the use of text mining and the results were netnographically investigated.*

**Findings:** *The analysis enables the search for information, which aims to: a) identify the most frequently used keyword and thematic messages by official wine tourism destination websites; b) profile wine tourists who speak of wine tourism destinations under study.*

**Research limitation:** *The two main limitations of the study are: (i) the analysis has been conducted only on the wine destination websites, which are less interactive than social networks; and (ii) the netnographic approach used is of the observational kind and thus doesn't provide any interaction with wine tourists themselves.*

**Research and managerial implications:** *In managerial terms, the results of the analysis of user-generated content can be used to (re)direct communicational strategies and develop a more innovative and personalised tourist offer.*

**Originality/value of paper:** *The originality of the research lies in the application of research methods that enable interesting research hypotheses, although they are still infrequently used in tourism marketing studies.*

**Key words:** *web wine tourism communication; netnography of wine tourists; wine web 2.0.*

## 1. Introduction

Wine is apt to satisfy more complex needs than purely gastronomic ones (Crescimanno and Galati, 2014; Nosi, 2012) as it enables experiential

<sup>1</sup> While this paper is the result of reflections made jointly by the authors, in terms of final drawing up, paragraphs 1 and 2 are to be ascribed to Monica Fait, paragraph 3 to Paola Scorrano, paragraphs 4 and 5 to Federica Cavallo, and paragraph 6 to Lea Iaia.

circumstances thanks to its emotional, symbolic and hedonistic elements. In fact, these features compose its cognitive value - linked also to its area of origin (Costantinides and Fountain, 2008; Li and Bernhoff, 2008; Mattiacci *et al.*, 2006), which allows wine to become one of the most preferred cornerstones of online socialisation.

Consequently, wine tourism (Hall *et al.*, 2000) has similar features, as it is characterised by particular needs that often require customisation of the tourist offer. Indeed, in this context, special needs prevail; associated with knowledge of the area, culture, traditions and lifestyles, they extend the field of wine from its narrow sense (Mitchell *et al.*, 2000).

For the above-mentioned reasons, the role of web communication in this particular field seems to be significant but, at the same time, complex, as it requires targeted web marketing (Buhalis and Wagner, 2013). Indeed, for wine tourism destinations (Rosato and Scorrano, 2011; Franch, 2010; Hall and Mitchell, 2002; Telfer, 2001; Hall *et al.*, 2000; Peters, 1997), the ongoing digital revolution represents a big opportunity, as user-generated content (UGC - Wunsch-Vincent and Vickery, 2007) is highly valuable in developing customised, targeted communication which can provide a better *customer experience* and more incisive interaction (Sigala, 2012; Fuller *et al.*, 2008; Kujala, 2003).

This content, produced by 2.0 users, has become fundamental for the generation of new business activities, helping to plan and optimise marketing campaigns and identify models of behaviour and customer interests (Guttentag, 2010).

With the help of this information we can interact directly with consumers, making *data-driven marketing* (Kumar *et al.*, 2013) the basis of successful communication.

For these reasons, the paper aims to examine online communication developed by wine tourism destinations and their users in order to:

- firstly, identify the most frequently used keyword and thematic messages by official wine tourism destination websites;
- secondly, profile wine tourists who speak of wine tourism destinations under study.

The analysis enables the identification of strategic approaches potentially suitable for the development of new web communication formats and innovative entrepreneurial formulae that meet the expectations of increasingly demanding and expert customers.

## **2. The theoretical framework on the web communication and on the netnographic approach**

This paper, which is part of a broader research project, seeks to contextualise web communication studies in the specific sector of wine tourism, nowadays characterised by the increasingly operative role of web users. Indeed, the latter are increasingly important for communication strategies and the attempts made by enterprises and wine tourist destinations to enhance their visibility (Schimmenti *et al.*, 2014; Begalli *et al.*, 2009; Hernández *et al.*, 2009; Kim and Niehm, 2009). This entails

reflecting on the strategies chosen by firms which not only have to listen to and satisfy their customers, but also have to take into account their role in creating and disseminating content (Dwivedi *et al.*, 2012; Ozuem *et al.*, 2008; Ranganathan and Ganapathy, 2002). All this is particularly significant in the sector under consideration (Hall and Macionis, 1998), in which the visitor can be considered both in relation to the motivation (high-low) linked to the journey and to the “experiential” dimension of their relationship with the “wine” element (Charters and Ali-Knight, 2002). This aspect can generate high levels of fascination which may continue even after visiting the destination, in some cases thanks to the social dimension, which makes it possible to choose, appreciate and disseminate the destination (Huang and Hsu, 2010) and therefore the visitor’s own experience.

The pervasiveness of social media - particularly blogs, forums and/or communities (Schmallegger and Carson, 2008) - makes it possible to acquire important data about users (preferences, attitudes, expectations, personal data, etc.), including consumers’ evaluation of companies (Hays *et al.*, 2012; Fotis *et al.*, 2011; Xiang and Gretzel, 2010; Chiarvesio and Di Maria, 2009). Customer satisfaction (or dissatisfaction) is shared with others and with the companies themselves, sometimes producing a community in which not only the form of communication changes, but also its content and purpose, as it does not seek to convince, but rather to share and inform. Forms of integrated marketing communication are thus implemented (Naeem *et al.*, 2013; Oancea, 2011; Holm, 2006), in which the network formula of informational flow prevails and allows the coexistence of *one-to-many*, *one-to-one* and *many-to-many* procedures. In the Web 2.0 era (O’Reilly, 2005), characterised by the customer’s active involvement in the informational flow and his or her ability to create content, companies have to reconsider not only the instruments employed but also the type of communication chosen. It is also necessary for them to monitor UCG (Fait *et al.*, 2014) and the resulting online word-of-mouth communication (also considering its “buzz” dimension), and thus take part in consumers’ conversations, to avoid losing control of content. Considering communicative exchanges (Siano and Vollero, 2012) could help to direct the web communication process and could stimulate the creation of targeted groups (Kietzman *et al.*, 2011), ultimately redirecting business strategies.

In this perspective, new entrepreneurial formulae, based on the satisfaction of specific user needs that must be suitably studied and analysed, can be generated. Information can be used to (re)formulate innovative business models - in the case at hand, in the field of tourism services - based on the ability to rapidly modify the offer in response to information arising from the web. In order for this to be successful, it becomes necessary to identify the right sources of information to draw on. In this case, reference can be made to wine tourism destinations, which are the object of abundant UGC that individual companies sometimes cannot obtain. For this reason, when creating the present model of analysis we turned to the above-mentioned organisations (*wine tourism destinations*) and their exchange of messages with their variegated user community.

The age of Web 2.0 and the rise of virtual communities have confirmed internet as one of the most important tools for all actors in tourism. Today

the Web is the place where not only journeys are planned (booking means of transport, hotels, museums, etc.; Quinton and Harridge-March, 2010), but above all, where experiences, emotions and opinions are shared. It is a new space for social interaction that can provide useful ideas for honing the strategies of wine destinations, as well as conveying their message in a direct, immediate way.

In such contexts, customers are more active. Unlike traditional marketing, mainly characterised by one-way relations principally directed by the enterprise towards the market, consumers now create and disseminate their ideas and opinions directly on the Web, contributing to ongoing interactive dynamics involving a number of subjects (*many-to-many or multi-way*), based on networks rather than hierarchical interconnections. In general, in the age of Web 2.0, enterprises and customers are the nodes of countless networks, where market relations are in part determined by conversations among and with consumers. Thus, by implementing and using these social platforms, enterprises can pay attention to their customers, acquiring *feedback* and conducting an ongoing dialogue with users, helping them to innovate their relational approach and increase the potential for interaction and engagement (Howe and Strauss, 2007; Denegri-Knott *et al.*, 2006). In this sense, it is possible to talk about consumer-to-business or reverse marketing, due to the customer's participation in determining the product-offering or other elements of the marketing mix (Neuhofer *et al.*, 2013; Prebensen and Foss, 2011; Tapscott, 2009; Zwick *et al.*, 2008; Prahalad and Ramaswamy, 2004), in a perspective of *digital prosumerism* (Ritzer and Jurgenson, 2010; Toffler, 1980).

It is thus particularly helpful to delineate the various types of web users on the basis of their conversations and the topics that are most frequently discussed by groups of internet users. To this end, netnographic analysis may be used as a support. (Kozinets, 2002).

Netnography is a branch of ethnography and cultural anthropology applied to the Web. The technique is based on content from online sources, encompassing both the topic under consideration and the subsequent interpretation of data (Wu *et al.*, 2013; Ismail, 2010; Xun and Reynolds, 2010; Puri, 2007; Dalli and Corciolani, 2007). As the textual content on the Web has grown (becoming more complex both in scientific-cultural terms and as a form of social interaction), in recent years there has been a sharp increase in studies and research - especially in the sociological field - based on netnography. The latter is defined as "ethnography adapted to the complexities of our contemporary, technologically mediated social world", in other words a method that can make a key contribution to the comprehension of "life in the time of technologically mediated culture" (Kozinets, 2010).

The netnographic approach used in the present paper is based on the direct observation of a virtual community through analysis - without direct participation - of its conversations (De Valck *et al.*, 2009; Cova and Pace, 2007).

### 3. Research hypothesis and methods

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Given this premise, the current paper proposes two main research hypotheses:

- $H_1$ : In order to achieve visibility on the web it is necessary for a website to convey information consistent with the users' expectations. In this sense, constant examination/monitoring of *consumer-generated content* is fundamental.
- $H_2$ : The topics around which wine tourists' discussions revolve can provide useful insight for management, helping to profile wine tourists and thus to formulate a personalised and effective communication strategy.

From such hypotheses derive the following research questions:

- $Q_1$ : *What web communication strategies are used by the main international wine tourist destinations and therefore by their most popular websites? In other words, what macro-topics are conveyed through wine destination websites?*
- $Q_2$ : *What are the main discussion topics on blogs, forums and communities? In other words, what information is most frequently requested by wine tourists and what do they mainly discuss?*

The research method is a mixed method, using different methods depending on the hypotheses and the questions it seeks to answer (Teddle and Tashakkori, 2009; Plano and Badii, 2010).

With reference to  $H1-Q1$ , a comparison (partly adopting the principles of benchmarking - Watson, 1995) of the main wine tourist destinations was conducted, held by wine tourists to be representative of excellence, as examined in previous researches (Scorrano *et al.*, 2013) based on the *top of mind* approach (Aaker, 1996); such wine destinations are thought to be: Napa Valley, California, Bordeaux, France, Tuscany and Italy.

In order to identify the related website with good placement on Google of each wine destination, the keywords "*wine tourism*" combined with the destination name (consultation: December 2013) were used; the website links available on the first page of the *Google.com* results were compared on the basis of the following standards:

- *Page Rank* provided by Alexa (<http://www.alexa.com>),
- Presence of at least one social profile on the main *social media* (e.g. Facebook, Twitter, etc.).

After the individuation of the six websites (the first with a good *page rank* and a high relevant presence on social media, for each wine destination), the features of online communication concerning these wine destinations were examined. Consistent with the aims of the research, the analysis considered the communicative perspective (Maizza *et al.*, 2013; Scorrano, 2013; Lee and Kozar, 2012; Law *et al.*, 2010; Chiou *et al.*, 2010; Polillo, 2010 and 2006; Mich *et al.*, 2004); so, for each website, the following aspects were analysed by the authors (as also proposed by Crescimanno *et al.*, 2015; Begalli *et al.*, 2009; Cox and Dale, 2002):

- a. *Information Architecture*: the website's overall configuration (layout, colour, etc.) and relative modes of navigation. This phase sought to verify the page design and the simplicity of navigation between them (Polillo, 2006);

- b. *Visual Communication*: the content of the images and their consistency with the text;
- c. *Usability*: user-friendliness, i.e. the ease of retrieving the desired information completely and rapidly;
- d. *Social Media Dimension*: the capacity for integration with social media, fundamental for increasing engagement with current and potential customers.

A deepen analysis on website content was carried out by means of text mining (Koslowsky, 2010; Kin-Nam *et al.*, 2005) in order to identify the thematic messages and keywords most frequently used by the wine destinations under consideration. With regard to H2-Q2, as already mentioned, a search on *Google.com* (consultation: December 2013) was conducted using “wine tourism” combined with the destination name as keywords. In this analysis, the first three pages of results yielded by the “Discussion” search tool of *Google.com* were examined. In this way, it was possible to identify blogs, forums and communities in which wine tourists talk about the topic under consideration, discuss, exchange information and express opinions and/or decisions.

This (broad) content was then reprocessed in accordance with the text mining method (Koslowsky, 2010; Kin-Nam *et al.*, 2005), in order to highlight the most frequently recurring topics and the most sought-after information among *wine tourism* lovers, with two objectives:

- to highlight the themes which these users discuss most frequently, and to verify whether the data sought by users are also (easily) available on the related wine destinations’ business websites;
- to compare the results for each wine-destination in order to create a netnography (Kozinets, 2002) that delineates the characteristics and distinctive features of the various types of *wine tourist* in relation to the most frequently discussed topics.

#### 4. Text mining and wine tourism destination websites

In order to identify the most frequently used keyword and thematic messages by official wine tourism destination websites (objective 1, referring to H1 and Q1), the analysis proceeded by stages, whose results are shown in the following paragraphs.

##### 4.1 Website investigation

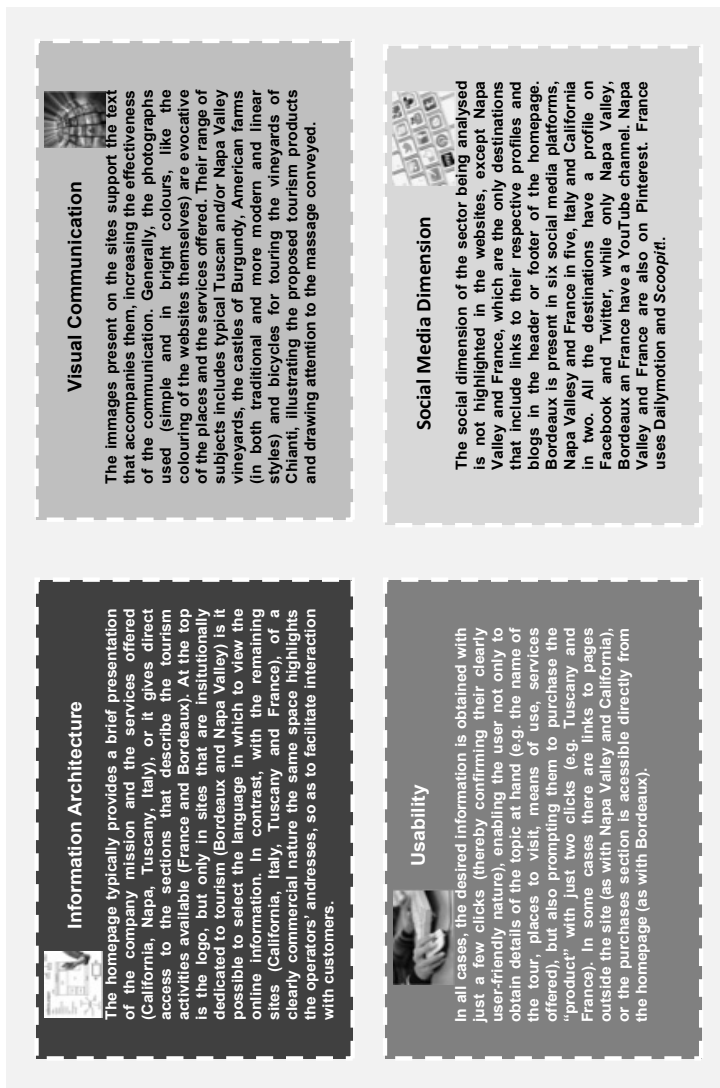
Applying the above-mentioned methods, the analysed websites were:

- *The Napa Valley* ([www.visitnapavalley.com](http://www.visitnapavalley.com)),
- *California Wine Tours* ([www.californiawinetours.com](http://www.californiawinetours.com)),
- *Office de Tourisme de Bordeaux* ([www.bordeaux-tourisme.com](http://www.bordeaux-tourisme.com)),
- *French Wine Explorers* (<http://wine-tours-france.com>),
- *Tuscan Wine Tours* ([www.tuscan-wine-tours.com](http://www.tuscan-wine-tours.com)),
- *Italian Wine Tours* (<http://www.italianwinetours.com>).

An initial analysis of the websites shows that in two cases out of six, they are run by the official authority designated for the promotion of local



Fig. 1: Summary of the analysis of wine destination websites



Source: our presentation

#### 4.2 Text mining and wine destination websites

T-Lab software was used to analyse the textual content of company websites in detail. The main *keywords* (980) used by wine travel destinations

were then identified, along with the semantic networks existing between them. This in turn made it possible to identify thematic *clusters* characterised by high homogeneity within them and high heterogeneity among them. As expected, the most frequently recurring terms concern the place names (Napa Valley, California, Bordeaux, France, Tuscany and Italy) and other areas associated with wine production (Sonoma, Chianti and Montalcino). For this reason, these lexical units were not included in the word cloud in Figure 2.

The central term, around which most of the textual content is structured, is “wine”, which is repeated no less than 1,761 times. In more than half of the cases, the term wine occurs more frequently than the name of the destination.

Fig. 2: Word cloud of the main keywords used by wine destinations



Source: our presentation

The semantic affinities between certain words make it possible to connect them to four main macro-themes:

- places of production and the people involved (*winery, vineyard, winemaker*);
- accommodation facilities and related services (*hotel, resort, chateau, castle, service, transfer, breakfast*);
- events and entertainment places (*wine tasting, tour, festival*);
- taste and well-being (*food, taste, lunch, dinner, relax, experience, luxury, spa*).

Albeit in different ways and to different degrees, these features are common to all wine destinations, and may therefore be considered fundamental to the dissemination of each area's distinctive characteristics.

Further in-depth analysis of these semantic networks was conducted using Multidimensional Scaling (MDS), a technique that uses similarity matrices to represent the relationships between data within a reduced space.

In Figure 3, the diameter of the circles reflects the likelihood of each term's appearance (the greater the diameter, the more frequent the item); moreover:

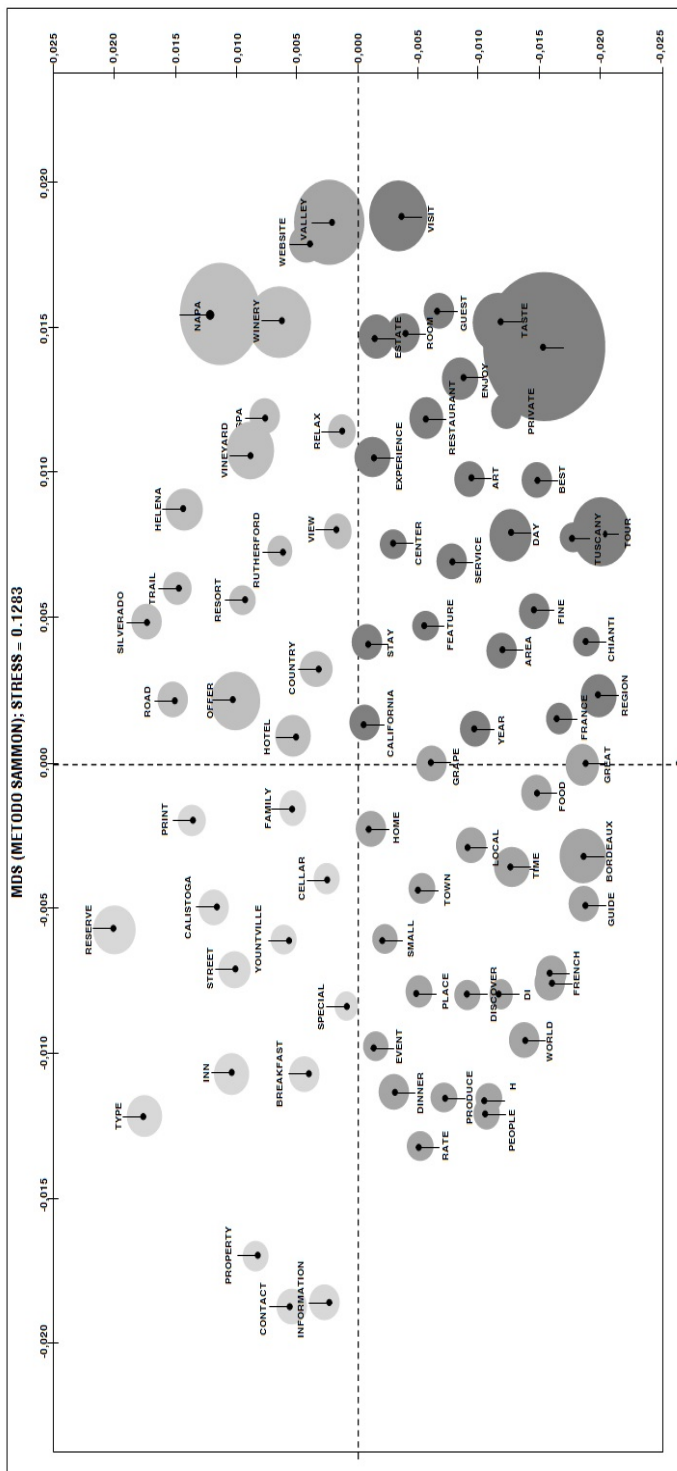
- the grayscale represents the thematic categories of the most frequently discussed subjects;
- the four thematic quadrants have stronger associative links within themselves, but there are relations among them too;
- the spatial orientation of the circles is not statistically significant.

In accordance with their internal homogeneity, the quadrants in Figure 3 were associated with the following four main thematic areas:

1. The *Wine Tour* quadrant encompasses words related to this type of tourism, from the 'stay' in the "rooms" of an accommodation facility to the "visit" to a wine cellar and/or 'restaurant', as well as the consequent "experience". Note the adjectives ("best", "fine") and verbs ("enjoy") qualifying such activities/services, by which the destinations (in this thematic nucleus, especially "Tuscany", "Chianti", "California", "France") seek to attract the greatest number of "guests";
2. The quadrant referring to the "*Extra*" services of a wine tourism destination is not limited to the visit to a "wine cellar" or the discovery of a "vineyard" in the area; it also includes the provision ("offer") of additional services: for this reason, "Napa Valley" emphasises "hotel", "resort" and "spa", in order to meet the visitor's potential need for "relaxation";
3. The *Food&Event* quadrant examines in depth every "local" aspect of the "world" of wine: there are frequent suggestions, especially on the "Bordeaux" website, of "places" and/or "events" at which you can "discover" the "typical" dishes and "wine" of the destination in question;
4. The *Booking* quadrant contains words related to "contacts" and useful "information" for hotel or "wine-cellar" bookings.

In order to assess the lexical specialisation of each wine destination with reference to precise thematic areas, the Analysis of Specificities technique was used. This makes it possible to verify which lexical units are typical of each subset into which a corpus has been subdivided, after defining a variable. This highlights the context units that are characteristic of a particular subset, and thus the 'typical' sentences that best exemplify the communicational messages of the different wine destinations under consideration (see Figure 4: *Analysis of the Specificities of wine destination website content*).

Fig. 3: Multidimensional Scaling Map (MDS – Sammon Method) of the textual content of wine destination websites



Source: our presentation

Fig. 4: Analysis of the Specificities of wine destination website content

<b>Office de Tourisme de Bordeaux</b>	The focus is usually on historic and artistic heritage, proposing visits to the "city", to discover the "monuments" and "vineyards" listed by Unesco, while providing useful information on "transport".
<b>French Wine Explorers</b>	This highlights France's "prestige" cities and "châteaux", as well as its wine "varieties", after which the tours are often named, usually accompanied by highly positive words ("fascinate", "deluxe", "favourite"), in order to prompt the tourist to "explore" the location.
<b>Tuscan Wine Tours</b>	This describes the areas of production of famous wines ("Chianti", "Montalcino"), highlighting landscape features such as "hills", providing a "map" and making suggestions for "lunch". Also important is the emphasis on the production of (olive) "oil", with the aim of introducing the public to this product.
<b>Italia Wine Tours</b>	This proposes various "areas" to visit, not limited to those that are closely linked to the world of wine ("Bolgheri", "Chianti"). It also emphasises the "coast" of certain areas, recommending the "sea", "fish" and "seafood".
<b>The Napa Valley</b>	This dedicates much attention to the area's "wineries" and "vineyards", providing precise information on "hotels" and "resorts" to stay in, as well as "bed & breakfast" accommodation.
<b>California Wine Tours</b>	After describing its cities of excellence such as "Sonoma", it provides detailed information useful for "travellers" and their "transfers", before discussing the various "airport" terminals, payment methods and services it offers.

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entrepreneurship

Source: our presentation of data

In addition to their own core products, each of these wine destinations finds in the local context elements of characterisation and specialisation with which to differentiate its activities from those conducted in the rest of the world, thereby making its own area unique and not like anywhere else (Anholt, 2007).

Such standardisation of communicational messages is the result of co-marketing measures implemented by the wine tourism destination together with other enterprises in the area in accordance with a synergistic approach. This serves to offer an integrated tourism product that stresses the area's distinctive assets (in terms of nature, art, culture, gastronomy, accommodation) and identity, making it both attractive and distinct from its competitors (Franch, 2010; Hall and Mitchell, 2002, Hall *et al.*, 2000, 1998). It is thus fundamental to consider the services that make the product easily usable, as well as the tourist attractors, that is to say the elements that improve the offer and increase the appeal of the destination (Naeem *et al.*, 2013; Kotler *et al.*, 2010; Holm, 2006).

For this reason, the communicative strategies of wine tourism destinations need to adopt a broad approach that treats the surrounding environment as an extra product and the customer as a co-producer of the service, not neglecting the multiple interactions among customers and between customers and the tourist system as a whole (Getz and Brown, 2006).

## 5. The results of the survey of online discussions

To profile the wine tourists who speak of wine tourism destinations under study, the textual content of the online discussions (objective 2, referring to H2 and Q2), identified using the above-mentioned approach, was analysed with the text mining method, processing:

- 7,894 elementary contexts;
- 19,592 forms;
- 16,291 terms;

making a total of 308,675 occurrences, considering a threshold of 6 (T-Lab).

This study used the “Discussion” search tool provided by Google.com, which returns only blogs, forums and communities in which the discussion is about the specified search terms, in this case the examined wine destinations. From each of the obtained results, considering only the first three pages, the text of the title or the given question was recorded, together with all the comments/replies, except for those related to groups created on Google ([www.groups.google.com](http://www.groups.google.com)), whose registration to the community was required. In this way, it was possible to assemble and analyse the contents of 25 online platforms for each wine tourism destination, each of which provided an average of about twenty comments from wine tourism lovers. The total volume of text analysed by the T-Lab software amounted to about 1,000 pages in .doc format.

The initial analysis confirmed what had already been emphasised in the survey in H1. Indeed, the UGC revolves mainly around the word “wine”, of which there were 3,376 occurrences. The other most frequently used keywords are associated with the ‘experience’ (323) of wine tourism as travel in the narrow sense: “winery” (1,356), “tour” (1,203), “visit” (1,036), “taste” (815), “tourism” (489), “travel” (422), “vineyard” (371). Regarding the evaluation of the experience, the words most frequently used by wine tourists are: “great” (619), “love” (308), “enjoy” (273), “beautiful” (228), “fun” (155), “wonderful” (145), “easy” (139), “amaze” (121).

Although the discussions are linked by the same thread (interest in areas suitable for high-quality wine production), the macro online discussion among wine tourists can basically be linked to two types of “suggestion”:

- *expert*: linked to wine-cellars and vineyards to visit, to the wines and their characteristics, to tastings and the most important events in the area;
- *fun*: linked to complementary aspects of the places taken into consideration, highlighting the landscape, culture and history, as well as the gastronomic specialities, traditions and things to do during the holiday.

The names of the wine destinations analysed recur in the following order of frequency: “Italy” (684), “Napa” (521), “France” (353), “Tuscany” (336), “Bordeaux” (333) and “California” (192). From these numerical values two considerations arise:

- the first two destinations are those that generate the most content, thus obtaining a high number of posts;
- discussions and exchange of information about these wine destinations occur not only when the post directly concerns the destination. For example, an opinion and/or a suggestion related to Tuscany is often extended and enriched with information regarding the whole country, i.e. Italy. Moreover, Italy appears in discussions concerning France, very often in order to make a comparison, highlighting their distinctive features or similarities.

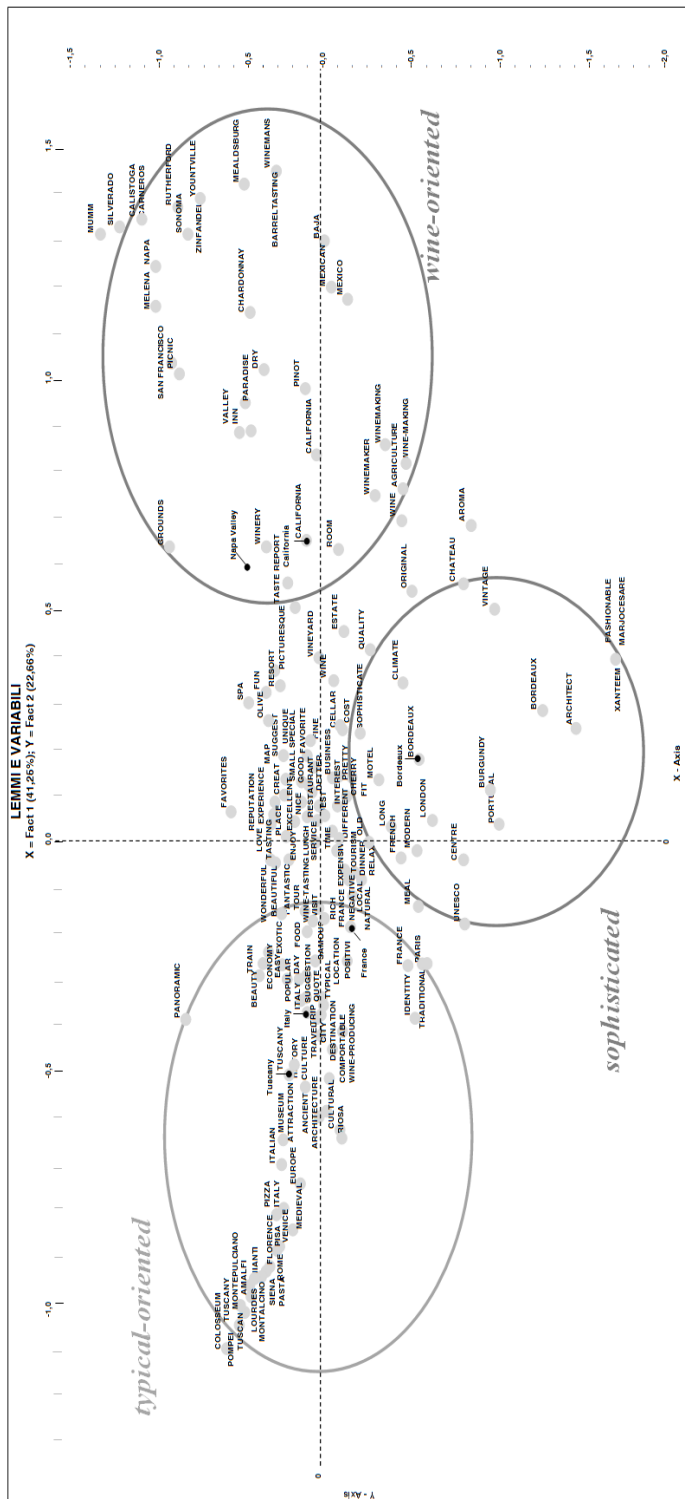
This is also confirmed by the Analysis of Correspondences (see Figure 5), which makes it possible to represent the data in a reduced space, thus illustrating the polarisation of variables on a Cartesian chart.

This technique made it possible to summarise the information taken from blogs, forums and communities in a bi-dimensional space. The relations between the context units in terms of proximity and distance (similarity and difference) were analysed in order to identify the behaviour of the different wine tourists in relation to the destinations under consideration.

This graphic representation makes it possible to classify, in accordance with the netnographic approach, three main types of wine tourist (the names given to the different groups come from the interests noticed in the discussions):

- *sophisticated*: i.e. those who favour the “fashionable” aspect of a location, who exchange views on the best “chateau” to visit or the best “vintage” offered by “wineries” during tastings. Many suggestions concern not only the technical characteristics of local productions, but also the price, and are frequently characterised by a high degree of precision (“A red Bordeaux wine needs at least 10 years to mature. A young red Bordeaux, even when it comes from a grand chateau, is just bland and full of tannins. The complex fruit and mineral aromas need time to develop”; “More recent vintages range in price from \$29 a bottle for the 2002 all the way up to \$83 for the 1999”). The most frequent words are in significant semantic proximity to the content related to the Bordeaux variable;
- *wine-oriented*: wine tourists who mostly discuss Napa Valley and California. Information on these two wine destinations is linked to the world of wine itself. They often discuss people involved in the production chain and they talk about the best wines (very often emphasised with superlative adjectives), wine-cellars, vineyards to visit and the importance of aspects linked to cultivation and production during their tours (“Always a better experience doing the small production wineries, IMO. Meeting the owners and winemakers is so special!”; “The Syrah is slap-your-mama fantastic, and I could bathe in the Zinfandel and Cabernet. Even the Chardonnay is superb. None of Chris’ wines overpower you with alcohol, yet they’re all big, robust wines, including the white. You can actually taste the grapes, the soil, the rocks, the wine. You HAVE to stop in here and buy a bottle or two. He’ll take you out amongst the grapes for an agriculture lesson if you ask him to. He’s always great about educating his customers. We’re headed out there for Memorial Day week, and I can’t wait. Can you tell I’m a big fan?”; “The wines were quite good, and we really got a good education in wine country agriculture and wine making”);

Fig. 5: Analysis of Correspondences in the textual content of blogs, forums and communities (circles show wine tourist netnography)



Source: our presentation of data



- *tradition-oriented*: these tend to be wine tourists talking about Italy, Tuscany and France. On the Web they analyse the cultural and architectural aspects of these places, emphasising their history and traditions, as well as the “food” and characteristic local products. Discussing their tours, they give detailed suggestions on things to do, monuments to visit, how to buy tickets for museums and how to reach the most interesting towns (*“You’ll have a wonderful time discovering the area you stay in - shopping for local products, eating good food, drinking good wine (it is hard to eat badly in Tuscany, most “trattoria” have extensive wine lists just like the restaurants do) and most of all taking part of your nephew’s wedding in such a beautiful context as Tuscany!!”*).

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Besides the observed clusters, there are also terms located around the centroid of the bi-dimensional space that have proximity relations, from the lexical point of view, with all the wine tourism destinations under consideration. These words reveal positive sentiments among the wine tourists: as can be seen from the graph (see Fig. 5), the tour experience in the wine destination under consideration is usually identified by lexical units such as “good”, “favorite”, “enjoy”, “excellent”, “great”, “nice”, “beautiful”, “wonderful”, “interest” and “pretty”.

Lastly, it is useful to consider the presence, albeit limited (only three occurrences), of negative adjectives. Lexical units such as “negative”, “not good” and “expensive” do not qualify the products and/or areas linked to the wine destinations under consideration, but are usually linked to the purchase of extra services (water taxis, meals, gifts): *“From the cruise port you can choose three different means of water transport; most expensive is a private water taxi”*, *“My favourite place in Italy is the island of Capri, but boy is it ever expensive! Me and my partner paid £30.00 for burger and chips each and one small beer each, and that was back in 2007!”*.

## 6. Conclusions

The present paper originated from two research hypotheses (and related questions):

$H_1$ : In order to achieve visibility on the web, it is necessary for a website to convey information consistent with the users’ expectations. In this sense, constant examination/monitoring of *consumer-generated content* is fundamental.

$H_2$ : The topics around which wine tourists’ discussions revolve can provide useful suggestions for web marketing, helping to profile wine tourists and thus to formulate a personalised and effective communication strategy. This can also lead to the birth of new companies or new services calibrated to the specific needs of different users.

Via the formulation of answers to the research questions, the analysis thus conducted made it possible to confirm the initial hypotheses and emphasise the need for greater dynamism on the part of enterprises in order to preserve and/or improve their competitive edge. Indeed, monitoring online conversations is a way for wine destinations to obtain customer feedback, gain knowledge of their tourist experience and enrich the content

of the offered products. It was thus possible to outline the characteristics of the “new wine tourist”, who is well-informed, chooses the destination in accordance with his interests and plans his free time, at the same time becoming a ‘spokesperson’ for his own travel experiences who provides useful suggestions to the other members of the community.

The scientific contribution of this research is represented by the application of the text mining analysis and netnographic approach in the wine sector, in which they are not often utilised. Therefore, the analysis model designed is thought to be potentially adoptable in any sector; indeed it enables the identification of the most frequently thematic messages in the corporate websites under study and profile users of the Network.

In this sense, the research conducted can have managerial consequences in terms of delineating an integrated tourist offer on the basis of the insight gained by analysing ‘virtual discussion rooms’ that reference the enterprise. These communicative platforms offer significant informational opportunities that are useful for planning a personalised, attractive offer for the customer. However, they also allow enterprises to become acquainted with the perceptions of users and thus the brand image that is generated by rapid word-of-mouth online communication. To this may be added the potential utility of the study in terms of creating a model of analysis that can be used for creating new offer formats for services that are closely linked to the specific needs of a demand that is constantly evolving. Indeed, the netnographic approach, with the profiling of UGC, makes it possible to conceive specific offer formulae that can predict, intercept and hopefully satisfy the various expectations, which are hard to identify with other types of analysis. This approach thus serves two purposes:

- a) to direct web communication;
- b) to define new types of offer linked to the specific needs of the demand.

The limits of the present study are of two kinds: from the communicative point of view, the analysis was based only on wine destination websites, which by definition are less interactive than the latest generation of social networks. The netnographic approach used is of the observational kind and thus provides no interaction with wine tourists.

In terms of the development of the research, the aim is therefore to complete the results by broadening the analysis to include the content adopted by wine destinations on the most frequently used social platforms (Facebook, Twitter, Pinterest, etc.). This research will take account of the fact that destinations using social networks need to continuously update their content, use a generally more informal/immediate tone than the one used on their institutional sites and deploy effective content that can generate engagement and strengthen the destination’s brand image.

It will also be interesting to further develop the netnographic analysis, possibly increasing the study sample, favouring a participative approach by means of questionnaires to be compiled by wine tourists in order to investigate their perceptions of the wine destinations observed.

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 communication and  
 tourist netnography.  
 Opportunities for new  
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## Abstract

**Purpose of the paper:** The paper aims to investigate whether Distretto ad Alta Tecnologia Campania Bioscience - CB, an emergent regional innovation network promoted by the Campania Regional Authority, can become sustainable, i.e. whether it can achieve the expected results and last in the future.

**Methodology:** The work is based on a qualitative method - a single case study - and investigates the sustainability of CB in reference to three theoretical aspects: a) the structure of innovation networks and the linkages established within them; b) the external context; c) the advantages and disadvantages of being part of such networks.

**Findings:** The above theoretical aspects have been properly considered when implementing CB. Therefore, up to now, CB is a candidate for a sustainable regional innovation network.

**Research limitations:** CB is still in an embryonic phase. This exploratory study leads to results that need to be confirmed - or that might be denied - by future, longitudinal studies.

**Implications:** Policy makers aiming to implement new regional innovation networks could recall the best practices adopted by the Campania Regional Authority when implementing CB.

**Originality/value of the paper:** To our knowledge it is rare to find articles trying to test sustainability of regional innovation networks in reference to Italy. This work therefore represents one of the first attempts to do so.

**Key words:** innovation network; triple helix model; university-government-industry; economic development; entrepreneurial university

## 1. Introduction

Nowadays policy makers are increasingly interested in defining and implementing regional innovation networks that are inspired by the *triple helix model* - involving universities-governments-industries (Etzkowitz *et al.*, 2000) - and that aim to:

- exploit the innovations resulting from R&D carried out in universities and research centres through the commercialization of new technologies, new products or new processes;

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<sup>1</sup> Although the paper is the result of the joint contribution of the authors, Mario Sorrentino wrote sections 1 and 3 while Diego Matricano wrote sections 2, 4, 5 and 6.

- support small and medium enterprises (SMEs), which usually do not carry out R&D activities, by offering innovations to be exploited;
- achieve economic development and growth in specific contexts.

Even if the implementation of regional innovation networks is positively evaluated since it is useful to achieve the development of a context (the main goal of governments) by matching the demand (from industries) and supply (from universities) of results of R&D activities, some scholars have investigated the causes of their possible failure (Orsenigo, 2001) or questioned their sustainability (Casper, 2007; Gilding, 2008; Zanni and Pucci, 2012). According to the above, this paper seeks to investigate whether the emergent regional innovation network *Distretto ad Alta Tecnologia Campania Bioscience - CB* promoted by the Campania Regional Authority in Southern Italy and related to the biotech industry can become sustainable, i.e. if it can achieve the expected results and last in the future.

The present work is structured as follows. In the following section, we start by reviewing the literature on the concept of the innovation network. At first, we focus on the transition from the closed to the open innovation model; then we examine the link between innovation network and entrepreneurship in depth. We seek to explain how innovation networks affect entrepreneurship, or, in other words, how innovation networks can be a driver, or a lever, capable of fostering and supporting entrepreneurial phenomena.

In section three, we underline the importance of innovation networks in knowledge-intensive industries. Our attention is chiefly paid to the biotech industry that, by definition, exploits the results of inter-organization R&D activities.

After defining the boundaries of the present research, in section four we underline the emerging interest in regional innovation networks based on the *triple helix model* and concentrate on three aspects that need to be considered when implementing it: a) the structure that innovation networks can assume and the linkages established within them; b) the context in which an innovation network can be implemented; c) advantages and disadvantages that can derive from being part of such a network.

The theoretical aspects treated above are instrumental to develop the single case study of CB, an innovation network whose main goal is to create a system supporting innovation, research and competitiveness in the biotech industry by establishing and developing strong collaborations between universities and industries. In section five we collect and analyze data and then we discuss the results.

The last section, number six, underlines the limitations of the study and suggests directions for future research.

## 2. Innovation networks and entrepreneurship

Acquiring external scientific and technological knowledge is crucial for the success of entrepreneurial ventures (Pittaway *et al.*, 2004). For

this reason, firms are switching from a closed innovation model, according to which innovation is secretly developed within the firm itself, to an open innovation model, according to which innovation results from an exchange of knowledge and competences with external subjects who are part of their network (Chesbrough, 2003; Chesbrough and Crowther, 2006; Laursen and Salter, 2006; Dahlander and Gann, 2010; Huizingh, 2011; West and Bogers, 2014). The networks created in order to achieve the above goal are appropriately termed innovation networks.

The origins of innovation networks can be dated back to the 1990s (Freeman, 1991; Lundgren, 1995; Osborn and Hagedoorn, 1997) and there seems to be a general consensus on their potential relevance to entrepreneurship (Gulati *et al.*, 2000; Adler and Kwon, 2002; Greve and Salaff, 2003). However it is still not clear how to evaluate the positive impact they generate (Hagedoorn *et al.*, 2000). According to the *Strategic Management* perspective, innovation networks affect achieved performances. In fact, the firms' capabilities in establishing, managing and sharing material and immaterial resources in an efficient way, the developed competences and the acquired knowledge can impact firms' performance. By contrast, according to the *Industrial Organization* perspective, innovation networks are relevant since they can influence the structure of industries, achievable efficiency and social wellness. In this case, success does not affect entrepreneurial ventures right away but rather passes through the configuration of the industry in which firms are positioned. From the perspective of *Transaction Cost Economics*, innovation networks are relevant since they can modify the market's or the industry's forces, as opposed to internal forces of ventures: hence a positive impact derives in defining the efficient boundary of firms. Eventually, according to *Strategic Entrepreneurship* perspective, innovation networks can facilitate both the discovery and exploitation of new entrepreneurial opportunities.

Despite the different theoretical perspectives that can be embraced and the possible measures of entrepreneurial firms' success, it is worth trying to identify the main characteristics of innovation networks. According to Rycroft and Kash (2004, pg. 187), for example, "*networks are those linked organizations that create, acquire, and integrate the diverse knowledge and skills required to create and bring to the market complex technologies. In other words, innovation networks are organized around constant learning*". In the above case, the most important aspect that scholars try to underline is the constant learning by entrepreneurial ventures. Very recent contributions, instead, have highlighted other aspects of the innovation network. Arranz and de Arroyabe (2012, pg. 488) maintain that "*the innovation network is a socio-technical system formed by three interdependent subsystems: process, structure and governance*"; they therefore highlight three aspects (process, structures and governance) that characterize each innovation network. Yet according to Corsaro *et al.* (2012, pg. 54), "*the innovation network is the configuration of strategic entrepreneurial nets aimed at improving the effectiveness of innovation performance*". In this last case, the most important aspect of an innovation network is its final goal.

By mixing the definitions above, it seems possible to sustain that an innovation network is a group of subjects involved in technology transfer

processes that is useful to share resources (mainly intangible ones, like knowledge or skills) in order to support and foster innovative processes (Powell *et al.*, 1996).

Such innovative processes are crucial for small and newly established entrepreneurial firms and for incumbent ones. The former can suffer from the liability of smallness and the liability of newness (Hannan and Freeman, 1984; Stinchcombe, 1965). The liability of smallness is due to the fact that small firms do not have many resources to invest; therefore it is difficult for them to compete with incumbents. The liability of newness results from the fact that new ventures have no reputation or legitimacy on the market. Thus, once again, they cannot compete with incumbents (Stinchcombe, 2000; Stuart, 2000). To overcome both of these liabilities, small and newly established entrepreneurial firms can decide to engage in different kinds of relationships or networks (Partanen *et al.*, 2011).

The second category of entrepreneurial firms, the incumbents, can be driven toward innovation networks in order to maintain their preeminent role in their industrial sector. R&D activities conducted by incumbent firms can suffer the risks linked to *lock-in* or *lock-out* theories. According to the lock-in theory, which is rooted in the entrepreneurial literature focused on the “*behavioral lock-in*” (Katz and Shapiro, 1985; Cowan, 1990; Barnes *et al.*, 2004), incumbent firms that have already carried out R&D for many years are specialized in some fields of research, so new research projects may be hard to design or start. They are locked into a well-defined research area and are thus excluded from some options (David, 2000). According to the lock-out theory, instead, incumbent firms cannot start new research projects because they might not possess the *absorptive capacity* - i.e. “*the ability of a firm to recognize the value of new external information, assimilate it and apply it to commercial ends*” (Cohen and Levinthal, 1990, p. 128) - required to do so (Spithoven *et al.*, 2011). In both cases, incumbents can start internal venturing processes (Burgelman, 1983; Block and MacMillan, 1993; Sorrentino and Williams, 1995) or, alternatively, they can enter and/or implement an innovation network.

In sum, both kinds of firms - new and small ones on the one hand, incumbents on the other - may be interested in innovation networks since, through them, they can discover new entrepreneurial opportunities (Elfring and Hulsink, 2003; Neergard, 2005; Pitt *et al.*, 2006; Matricano, 2011), obtain financial resources (Shane and Cable, 2002; Zhang *et al.*, 2008) or new technologies and knowledge (Lipparini and Sobrero, 1994; Pittaway *et al.*, 2004; Rickne, 2006). This confirms the importance that innovation networks can assume in fostering entrepreneurship.

### **3. Innovation networks in the biotech Industry**

Innovation networks assume considerable importance in knowledge-intensive industries - such as ICT, nanotechnology, and biotechnology - where different and various resources and capabilities are required to start and conduct very complex R&D activities (Hagedoorn, 1993; 2002).

Over the last three decades, innovation networks developed in the biotech industry have been a focus of considerable interest (Arora and Gambardella, 1990; Powell *et al.*, 1996; Baum *et al.*, 2000; Audretsch and Feldman, 2003; Pisano, 2006). It is widely recognized that partnering among firms in the biotech industry is necessary (Baum *et al.*, 2000; Gambardella, 1995; Pisano, 2006; Powell *et al.*, 1996; Powell, 1998; Roijakkers *et al.*, 2005; Sorrentino and Garraffo, 2012) and very widespread (Hagedoorn, 1993).

The main reason for partnering and promoting innovation networks lies in the nature of biotech R&D. Because of the high complexity of this activity, it is difficult for a single firm to develop all the cognitive as well as tangible assets required to promote and develop innovation in the industry. Partnering with a multitude of actors thus reflects the necessity of cognitive work division in the industry (Gambardella, 1995; Orsenigo *et al.*, 2001; Rothaermel, 2001a, 2001b), and biotech companies can be motivated to become part of an innovation network because of the need for new and more focused scientific and technological competences (Powell *et al.*, 1996; Powell, 1998). At the same time, being part of an innovation network has proven to be a very important source of funding (prior to an IPO) for small biotech companies (Cunningham, 2002; Audretsch and Feldman, 2003; Pisano, 2006; Lazonick and Tulum, 2011). The necessity of additional substantial funds is particularly real in this industry, as firms conduct very risky research projects that can last for several years and whose final results may not even be exploitable on the market (Pisano, 2006).

The need to cooperate with operators providing complementary resources results in co-localization phenomena, i.e. the creation, in defined geographic areas, of inter-organizational innovation networks and clusters including universities, research centers, spin-off firms, large firms, hospitals, incubators, venture capitalists, and other suppliers of specialized resources and services. Geographical proximity stimulates the creation of inter-organizational relationships, thus making it easier for biotech firms to obtain the necessary complementary resources, in particular knowledge assets, thus stimulating and supporting innovative processes (Cooke *et al.*, 2006). This is particularly true in the healthcare biotech industry, where biotech companies and pharmaceutical firms spawn very intense networks aimed at developing new drugs. While biotech companies tend to focus on the early stages of the drug development process (i.e. discovery, pre-clinical development phase and phase 1 of clinical trials), big pharma concentrate on subsequent phases (late stage clinical development phases and regulatory activities) where huge complementary resources are needed. This highlights the clear division - but also a complementarity - of roles between biotech companies and big pharmaceutical firms (Gambardella, 1995).

However, geographical proximity and local interactions between partners within innovation networks are not enough to pursue innovation in a global industry like biotechnology. Indeed, firms in biotech innovation networks are increasingly promoting global networks and multinational relationships (Cooke, 2002, 2005; Bathelt *et al.*, 2004) in order to avoid the cognitive implosion of territorial clusters and remain innovative and competitive.

Being part of innovation networks in the biotech industry also has its risks. Typical risks connected to asymmetric information and moral hazard (Kogut, 1989; Hamel *et al.*, 1989; Khanna *et al.*, 1998) are operating within the biotech industry and may terminate the alliance before the established aim has been achieved. Another risk of biotech innovation networks concerns the learning races that may take place between biotech companies. This can happen in emerging biotech industries, such as the Italian one, where thousands of small biotech companies adopting similar business models compete to access strategic resources and sell the output of their R&D activity on knowledge markets (Baum *et al.*, 2000; Gans and Stern, 2003). In these learning races, small biotech firms try to achieve their learning goals first (Hamel *et al.*, 1989; Hamel, 1991) and compete for patentable compounds, thus seeking to internalize knowledge that has not been patented yet. As a result, network partners may lose incentive to invest in the network itself, leading individualistic behavior to prevail over cooperative efforts (Baum *et al.*, 2000). Thus, research partnerships between firms in the network show a “dark side” (Gulati, 1998; Gulati *et al.*, 2000) due to the riskiness and complexity of such interactions. In particular, these risks can cause the failure of innovation networks (Orsenigo, 2001) or negatively affect their sustainability (Casper, 2007; Gilding, 2008).

However, by comparing the motivations and the expected results with the negative risks connected to being part of an innovation network, biotech firms can consider this network as a very important tool to compete in the market despite some risks along the way.

#### **4. Implementing a regional innovation network based on the triple-helix model: structure and linkages, context, advantages and disadvantages**

As discussed above, innovation networks can be considered as drivers or levers capable of fostering and supporting entrepreneurship in knowledge-intensive industries. Starting from this, some scholars have started investigating the importance that innovation networks can have in reference to regional development. Regional authorities can promote innovation networks aimed at increasing innovativeness and fostering economic and social development within their boundaries (Cooke *et al.*, 1997; Keeble *et al.*, 1999; Lawson and Lorenz, 1999; Doloreux, 2002; Chiaroni and Chiesa, 2006). In these regional innovation networks, firms collaborate with other private firms operating in the same industry or with public institutions focusing on R&D - e.g. public research centers or universities - since they can provide the necessary resources and missing skills (Cooke and Morgan, 1998). In this context, based on the close-knit relationship between universities and industries and on the importance that governments assume in implementing and supporting such relationships, the *triple helix model* (Etzkowit *et al.*, 2000) emerges. From a theoretical perspective, the convergence of aims on the part of universities, the industry and the government is easy to understand:

all concerned parties seek to foster the economic and social development of their own region. On the contrary, from a practical perspective, the implementation of specific actions is more complex. The government has to:

- steer R&D activities conducted by universities and research centers toward results that are exploitable by the industry;
- promote the achieved results in order to inform firms of the existence of exploitable results;
- manage exchanges between universities and the industry, and match demand and supply.

A very important role in the functioning of the triple helix model is ascribable to universities that, in the past decades, have been facing a profound change (Chiesa and Piccaluga, 2000; Etzkowitz *et al.*, 2000; Shane, 2004; Bramwell and Wolfe, 2008). Indeed, universities are now not only involved in research and educational activities, but they also try to achieve their third mission (Etzkowitz and Leydesdorff, 1999, 2000; Etzkowitz *et al.*, 2000; Etzkowitz, 2003). This mission consists in universities exploiting the results of R&D activities in order to support the economic development of the context in which they operate (Johnson, 2008). Firms have accepted this change and have thus started to leverage on the results of the R&D activities carried out by universities. Critical market conditions (high salaries, high entry barriers, and instability in market competition) are driving firms to reduce their R&D investments and seek innovations from the outside; universities seem to be able to supply them. Nevertheless, matching the demand (from industry) and supply (from universities) of R&D results is not a straightforward task. This is why governments (both at a national and regional level) play a crucial role in achieving this task.

Given their particular characteristics, it is far from easy to study regional innovation networks and generalize the results they can achieve. For this reason, three main paths of research have been addressed. They concern:

- the structure of innovation networks and the linkages established within them;
- the external context;
- the advantages and disadvantages of being part of innovation networks.

These three research paths are reviewed and debated in the following sub-sections in order to try to point out their main characteristics.

#### 4.1 Structure and linkages

Even if we can easily realize who are the involved subjects (i.e. government-industry-university), it is not possible to generalize the structure of innovation networks (Pittaway *et al.*, 2004; Salavisa *et al.*, 2012). As noted by Ricciardi (2006), each innovation network assumes a specific structure in reference to the hoped-for results. Thus, no generalization is allowed. However, it seems possible to find out some key aspects that can give information about the structure of innovation networks. According to Ricciardi (2006), there are two key aspects, namely the relevance of the actors and the evolving structure over time.

As for the relevance of the actors, it is important to ascertain if networks are spontaneous, policy driven or hybrid (Chiaroni and Chiesa, 2006).



They are spontaneous when favorable conditions take place without the commitment of public actors. On the contrary, they are policy-driven when there is a strong commitment of policy makers. In particular, policy makers can start industry restructuring policies or industry development policies. If needed, they are hybrid when governments intervene in order to support spontaneous networks that still exist but are underdeveloped or declining.

As for the network structure, it is important to note that innovation networks are supposed to change over time. The possibility that new members can join it or that old members can leave it necessarily means that the structure of the innovation network can be modified and, as a consequence, no generalization is allowed. However, in reference to the structure, some scholars (Salavisa *et al.*, 2012) invite us to pay attention to:

- size: since firms enter or create an innovation network in order to obtain resources they do not have, the higher the number of actors involved, the greater the chance of obtaining additional resources (Burt, 2000). This means that firms try to involve other actors by modifying the structure of their innovation network;
- type: when the involved actors carry out similar activities, there can be a problem of redundancy (Burt, 1992); on the contrary, when they carry out dissimilar activities, new resources are easily obtained (Baum *et al.*, 2000). There is a continuous search for actors to remain in contact; hence the structure can be modified;
- positioning: the relational position makes the exchange of resources much easier, which is a very important aspect to consider in innovation networks (Powell *et al.*, 1996). Actors in innovation networks try to get closer to the center, also termed as peak (Scott, 1991; Greve, 1995; Johannisson, 1998), therefore possible changes can take place in reference to the structure;
- links: kind, content and frequency of links determine the possible structure of innovation networks. The decision to leverage on strong or weak (Granovetter, 1973; 1985), formal or informal (Birley, 1985), additional or redundant (Burt, 1992; 2000), or on direct or indirect ties (Podolny and Baron, 1997; Ahuja, 2000) affects the structure of the innovation network and makes generalization impossible.

According to the above-mentioned contributions (Ricciardi, 2006; Salavisa *et al.*, 2012), neither the structure nor the linkages of a regional innovation network can be generalized since they can always change according to established objectives.

#### 4.2 *The external context*

The external context can determine the success or failure of regional innovation networks (Bramwell and Wolfe, 2008). Some contexts, in the sense of geographical contexts, can be considered *knowledge innovation zones* where it is possible to establish very strong connections and stimulate new entrepreneurial activities. In particular, this can be due to the spillover effect and to *technological brokers*.



The spillover effect, which can be defined as a positive externality that a subject not involved in R&D activities can obtain from the results of R&D activities carried out by others, is much stronger if the source and recipient of knowledge are geographically close. This is particularly true when the transfer processes concern tacit knowledge that is not formalized. Of course, if the transfer process concerns codified knowledge, for example through patent citations, geographical proximity is not so relevant.

As mentioned above, *technological brokers* play an important role in innovation networks (Amico Roxas *et al.*, 2011) since they can affect the success or failure of innovation networks. Effectiveness in exchanges of knowledge inside the network depends on the competences and skills that dedicated offices possess - these offices are properly named *technology transfer offices* or *industrial liaison offices* (Lockett and Wright, 2005; O'Shea *et al.*, 2005; Siegel *et al.*, 2007; Gómez Gras *et al.*, 2008). They deal with the commercialization of research results and, in particular, they deal with the facilitation of internal and external information flows and the definition of incentives (Phan and Siegel, 2006).

In contexts where the *spillover effect* is greater and where *technological brokers* are more efficient, regional innovation networks are more likely to achieve the established results.

#### 4.3. Advantages and disadvantages

The last aspect to consider when studying regional innovation networks concerns the advantages and disadvantages of being part of them (Ricciardi, 2006). The main advantages entail knowledge transfer, distinctive competences, financial resources, and exploitation of innovations. By contrast, the main disadvantages concern opportunistic behavior, asymmetric contributions and different aims.

The first advantage is related to the easiness of tacit knowledge transfer. Being part of the same innovation network suggests that all the involved subjects have already developed *absorptive capacity* (Cohen and Levinthal, 1990), even if, as already stated in reference to the lock-out theory, this might not happen. Generally speaking, since all the firms and universities involved operate in the same industry and should therefore have accumulated the same specific knowledge, the exchanges that are implemented in regional innovation networks are expected to be straightforward and, above all, to reinforce the *absorptive capacity* of each of the components. The second advantage is linked to distinctive competences that can be developed (Boardman, 2008). Firms can develop integrative competences (in order to mix internal and external knowledge), coordinative capabilities (capable of synchronizing new acquired knowledge) and generative capabilities (through which new knowledge is created). The third is linked to funding and economies of scale and of learning, which arise from sharing R&D costs. Finally, the last advantage consists in the straightforward exploitation of technological innovations.

However, being part of regional innovation networks can also cause some drawbacks. The first may stem from opportunistic behaviors (Williamson, 1975) that others can put into practice, both before and after

drafting the contract ruling the partnership. This kind of disadvantage was examined in agency theory (Jensen and Meckling, 1976). The second disadvantage can arise when subjects involved in the network do not share the resources arranged or when they pursue different aims. In both cases, the subjects are forced to proceed with the network activity or they could be interested in leaving the network. Both the possible advantages and disadvantages are shown in table 1.

*Tab. 1: Implications of being part of innovation networks*

Advantages	Disadvantages
1) Knowledge transfer	1) Opportunistic behaviors
2) Distinctive competences	2) Asymmetric contributions
3) Financial resources	3) Different aims
4) Exploitation of innovations	

Source: Adaptation from Ricciardi (2006)

## 5. The case study: Distretto ad Alta Tecnologia Campania Bioscience

### 5.1 Research design

As for the research design, we decided to carry out an explorative qualitative analysis using a single case study method (Eisenhardt, 1989; Yin, 1994). Although we know that in managerial disciplines there is still a predominance of quantitative methods (Lee *et al.*, 2007) - based on empirical data and statistical elaborations - we decide to conduct a qualitative analysis - based on a single case study - since it seems to better fit our research aim. As anticipated, in fact, we try to investigate whether CB can become sustainable and whether it can provide some *best practices* that other regional authorities implementing new innovation networks in the biotech industry could replicate. In other words, we start from a single and very detailed case study and we try to propose a general theory or model (Dyer and Wilkins, 1991; Eisenhardt and Graebner, 2007).

### 5.2 Data collection, analysis and results

In order to investigate whether CB can become a sustainable regional innovation network, we consider the theoretical items that emerged in previous sections in reference to the three main paths of research:

- the relevance of actors and the structure of the regional innovation network (size, type of activities, positioning, links);
- the external context;
- the advantages and disadvantages of belonging to innovation networks.

Data have been collected from different sources. Some of them have been downloaded from official websites ([www.regione.campania.it](http://www.regione.campania.it), [www.ponrec.it](http://www.ponrec.it) and [www.bioteknet.it](http://www.bioteknet.it)), some have been collected from

newspapers and some more detailed data derive from interviews with key informants and promoters of CB.

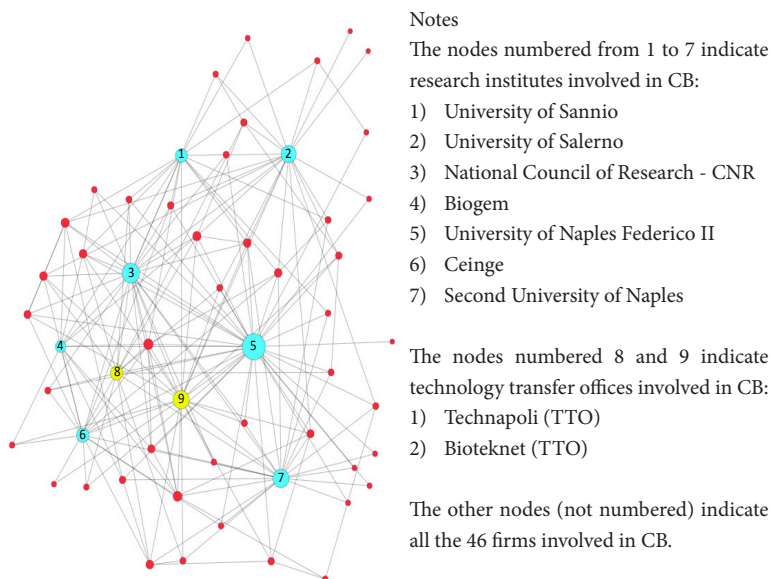
The first research path deals with the relevance of actors and the structure of the regional innovation network (see section 4.1). As for the relevance of involved actors, we need to start from the creation of CB. The project regarding its implementation can be dated back to March 22nd, 2011 when the feasibility study was presented. In April 2012, the Italian Ministry of University and Research (MIUR) approved the above feasibility study, and in August 2012 the agreement between the MIUR and the Campania Regional Authority, properly termed "*Accordo di Programma Quadro*", was signed. In February 2013, a limited liability consortium was established. In reference to the classification proposed by Chiaroni and Chiesa (2006), CB is a hybrid network and it aims to foster and develop the biotech industry in Campania. As emerged from an interview with a key actor, "*CB has been created in order to formalize previously established relationships among partners*". This means that the Campania Regional Authority has played - and actually still plays - a crucial role in the implementation of this *triple-helix* model.

As for the structure, we need to investigate its size, type of activities, positioning and links. Fifty-five subjects are involved in CB up to now. In particular, there are seven research institutes (both universities and research centers), two technology-transfer offices and forty-six firms (ten big, eleven medium and twenty-five small firms). By comparing CB with both international and national networks in the biotech industry, we can infer that it is small-sized (probably due to its recent creation). One of the interviewed key actors emphasized that the "*small size of CB has facilitated its implementation and can facilitate its management*". The activities carried out by the fifty-five partners - the second aspect to be considered - are totally different. Research institutes and universities focus on R&D activities, technology-transfer offices on knowledge exchanges and firms on final exploitation. Thus, the problem of redundancy seems to be reduced to minimum. As for the positioning, even if the Campania Regional Authority has driven the creation of CB, there is no peak (Scott, 1991; Greve, 1995; Johannisson, 1998). As emerged from one interview, "*this means that each subject can look for the most suitable partner to collaborate with, according to specific needs or aims*". Later, as for the links inside CB, we rebuilt the relationships between involved partners but we could not acquire information on the kind of established ties (whether they were strong or weak, formal or informal, additional or redundant, direct or indirect). After collecting these data, we performed a network analysis using Gephi - an open-source network analysis and visualization software package - to elaborate the data. Results are shown in Fig. 1.

The results deriving from the network analysis show that both universities/research centers and technology transfer offices cover a relevant role in CB since involved firms have not implemented relevant relationships among themselves yet. This is confirmed by the density value - calculated through Gephi - that is equal to 0,125 (this value is given by the ratio between the amount of established, effective relationships and the amount of all possible, potential relationships and so it can vary between 0, where involved partners do not collaborate with each other, and 1 where all the

involved partners collaborate). This low value means that many of their involved partners do not collaborate with each other. Despite this, key informants argue that the relationships that are already established inside CB are a clear signal of trust between involved partners and this sounds like a promising basis of CB.

*Fig. 1: The shape of the CB network*



Source: Personal elaboration

The second research path recalled before deals with the external context (see section 4.2). In order to analyze the regional context *CB* is in, it is appropriate to start from the data published in a report by Ernst & Young (2014) entitled “*Rapporto sulle Biotecnologie in Italia - BioinItaly Report 2014*” and referred to 2013. The report provides an overview of the biotech industry in Italy, with the distribution of biotech ventures on a regional basis (tab. 2).

Tab. 2: Distribution of Italian biotech ventures among regions

Diego Matricano  
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Implementation of  
regional innovation  
networks: a case study of  
the biotech industry in  
Campania

Italian biotech ventures per region		
Region	Number	Percentage
Lombardia	127	30.1%
Piemonte	48	11.4%
Toscana	39	9.2%
Emilia Romagna	38	9.0%
Lazio	36	8.5%
Veneto	27	6.4%
Friuli Venezia Giulia	23	5.5%
Sardegna	20	4.7%
Campania	12	2.8%
Puglia	12	2.8%
Liguria	8	1.9%
Marche	7	1.7%
Sicilia	7	1.7%
Molise	4	0.9%
Trentino Alto Adige	4	0.9%
Abruzzo	3	0.7%
Calabria	3	0.7%
Umbria	2	0.5%
Basilicata	1	0.2%
Valle d'Aosta	1	0.2%
Total	422	100.0%

Source: "Rapporto sulle Biotecnologie in Italia - BioinItaly Report 2014", Ernst & Young

Campania is in ninth position on the list and, according to specialists (Ernst & Young, 2014), it seems to be a promising context for the future development of the biotech industry. In particular, the region can aspire to become a *knowledge innovation zone* where new processes of *inventing around* can take place.

The third research path deals with the advantages and disadvantages of belonging to innovation networks. In order to rebuild this last research path, we need to start from the strategic objectives that the governance of the network has set up for its future functioning. These objectives (summarized in table 3) follow three main lines of intervention.

Tab. 3: Lines of intervention established by Campania Bioscience

Lines of intervention
Line 1 - Industrial research and experimental development - concerns three main fields of research:
A) Development and production of new biotech products
B) Diagnostics, bio-sensorial systems and innovative technology for the biomedical industry
C) Development and experimentation of new therapies
Line 2 - Higher Education - deals with education of researchers and technicians and concerns:
A) Industrial research projects and pre-competitive development
B) Managerial and technical skills
Line 3 - Promotion, internationalization, diffusion and technology transfer - includes six actions:
Action 1: Diffusion, dissemination and valorization of research results
Action 2: Patent protection
Action 3: Supporting the start-up process
Action 4: Internationalization of district and networking activities to obtain external funds
Action 5: Communication inside and outside the district
Action 6: Cooperation in international R&D

Source: Report edited by Distretto ad Alta Tecnologia Campania Bioscience, 2013

The first line of intervention refers to industrial research and experimental development and includes three main expected innovation outputs. The second deals with higher education. According to this line of intervention, network actors will share educational activities aiming at specific goals. The third and last line emphasizes the promotion and internationalization of the network along with the need to stimulate both the dissemination of scientific results and technology transfer processes.

By keeping these three lines of intervention in mind, we can now compare the advantages and disadvantage of being part of innovation networks (as emerged during the theoretical analysis presented in section 4.3). The first advantage is linked to technology transfer (which is dealt with in the second and in the third lines of intervention, see table 3). One of the interviewed key actors emphasized this by arguing: “*CB is a hybrid network where knowledge exchanges are carefully planned and coordinated in order to reach predetermined aims*”. The second advantage deals with distinctive competences shared by partners (mainly included in the third line of intervention). As previously mentioned, the fifty-five subjects involved in *CB* are of different natures (they are private or public subjects; they are companies, universities, research centers or technology transfer offices) so they can create the right expectations of sharing non-redundant competences. The third advantage refers to financial resources (the third line of intervention). According to data provided by *CB*, in

February 2013 the network started its activity with a share capital of nearly 1.7 million euro. Nowadays, thanks to the involvement of public and private partners, the total of resources held by CB amounts to nearly 50 million euro. During the interview with one of the CB promoters it emerged that *“all the partners involved in the network share the mutual-aid aim of the network so that its net profits are reinvested in R&D activities”*. The fourth and last advantage refers to the exploitation of innovation (included in the first and third lines of intervention). This advantage has not been realized yet.

Of course, there are some disadvantages. According to the theoretical analysis (section 4.3), the first two disadvantages concern opportunistic behavior and asymmetric contributions (which is dealt with in the first and in the second lines of intervention, see table 3). These disadvantages - which *“can never be eliminated but can be reduced”* according to a key informant - do not seem to constitute a real drawback since the partners involved in CB already have some collaborations in place. Reciprocal trust is at the basis of established relationships and this seems to be a promising premise for present and future partnerships within CB. The last disadvantage deals with different aims. Until now, this has not seemed to constitute a real threat. An interview with a key actor has revealed that *“all partners are very interested in the internationalization process and this seems to prevail over individual and specific goals”*. This is in line with the idea that firms in biotech innovation networks need to promote global networks and multinational relationships (Cooke, 2002; 2005; Bathelt *et al.*, 2004) in order to avoid the cognitive implosion of local networks.

The present analysis - by investigating the relevance of actors and the structure of the regional innovation network, the external context and the advantages and disadvantages of being part of innovation networks - drives to assume that CB is a good candidate as a sustainable regional innovation network. This result is due to the willingness both to exploit the positive aspects on which regional innovation networks can leverage and to reduce the risks that may arise.

However, before concluding, we need to state that investigation about CB's sustainability cannot be taken for granted. CB is still in an embryonic phase. This means that positive signals - which let us foresee CB as a sustainable regional innovation network - can be due to a careful implementation, but at the same time this means that negative signals have still not been revealed because of its recent creation. Of course, even if we cannot ignore such a recent creation, we need to highlight that CB is a hybrid network aiming to formalize previously established relationships and manage them in order to achieve better results. Generally speaking, the establishment of CB has been intended and carefully planned, so any risk has been reduced to a minimum. Therefore, if CB is going to proceed along this way - by ruling the network according to regional policies, monitoring its structure, referring to internal strengths and to opportunities offered by the external context, leveraging on some positive advantages and trying to avoid emerging disadvantages - it could really aspire to become sustainable. Moreover, CB could legitimately aspire to be an example of *best practices* when implementing a new regional innovation network in the biotech industry.



## 6. Limitations of the study and suggestions for future research

In order to investigate whether *CB* can be a sustainable regional innovation network, we have analyzed three main aspects related to its structure and the linkages, context and possible advantages/disadvantages of being part of it. As emerged previously, *CB* is a candidate for a sustainable regional innovation network.

Despite the achieved results, the present work presents some limitations that need to be underlined. The first one refers to the selected case. *CB* is an emergent regional innovation network and, as such, many of its key aspects have already been defined but not totally implemented. This lets us test its sustainability but, at the same time, it does not give us any certainty about its future development. This is the reason why entrepreneurial scholars focus their attention on established networks so studies referred to emergent networks are rare to find (Zanni and Pucci, 2012).

Two more limitations deal with research method. In particular, one limitation is related to the use of the case study method. Despite its use in managerial studies, it is still criticized and its validity is still questioned. Another limitation, instead, concerns the use of a single case study whose results - in comparison with the ones deriving from multiple case studies - are even more criticized and questioned.

The above limitations represent possible starting points for future research. In particular, the fact that *CB* is an emergent regional innovation network requires us to repeat this study in the future after completing its implementation. Alternatively, an international comparison could help define whether *CB* has been implemented according to best practices that other policy makers could adopt when establishing new regional innovation networks in the biotech industry.

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# The role of the innovation catalyst in social innovation - an Italian case study

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## Abstract

**Purpose of the paper:** Social innovation is emerging as a dominant discourse, especially in facing the issues posed by the current crisis. Due to its close link with the local area in which it takes place, social innovation is deeply rooted in the overall system, thus involving many different actors. These parties should work synergistically to support social innovation and this requires a connecting intermediary: the innovation catalyst. However, in spite of the existence of this kind of actor its role still hasn't been formally included among the existing models of social innovation. To fill this gap, our work has been carried out by focusing on TrentoRise, an Italian innovation catalyst. Its aim is to understand the role that an innovation catalyst covers and its key features.

**Methodology:** A single case study analysis has been developed to apply a fresh and innovative framework, the Social Innovation Pyramid, to the case of Trentino ecosystem.

**Findings:** The analysis shows that an innovation catalyst is fundamental in developing a healthy and functioning innovation ecosystem; therefore, it should be included among the existing innovation models.

**Research limitation:** The research has focused on a single case study. Widening the sample may be an interesting avenue for further research.

**Implication:** The proposed model can be replicated in other areas and adapted to the characteristics of their districts.

**Originality of the paper:** Traditional innovation models do not include the figure of the innovation catalyst, which is the focal point of our work.

**Key words:** innovation catalyst; social innovation; ecosystem; Trentino; Triple Helix; social innovation pyramid

## 1. Introduction

One of the pressing needs of our society is the increasing urge to enhance innovation, especially due to the unprecedented and unexpected social crisis we are facing. Enhancing innovation means developing a network of public and private institutions within which the production, diffusion and application of new knowledge and technology takes place (Erikson *et al.*, 2002; Vrontis and Thrassou, 2013). In this context, the concept of social innovation is becoming more and more prominent; in particular, it is a form of innovation that explicitly aims for the social and public good (Harris and Albury, 2009). As defined by OECD (2010), social innovation seeks new answers to social problems through new services, new labor market

integration processes, new competencies, new jobs and new forms of participation. In the case of economic innovation, the biggest difference is that instead of introducing new types of production or exploiting new markets, social innovation aims at satisfying new needs that are not provided for by the market or creating innovative ways to include people in the workforce, giving them a place and a role in the production process.

Several models have been developed to enhance innovation. One of the most cited is the Triple Helix Model (Etzkowitz and Leydesdorff, 2000), which considers the dynamic interplay of firms, universities and the public actor. This model has been improved by Carayannis and Campbell (2009; 2010), who moved towards a Quadruple Helix Model and then a Quintuple Helix Model to better capture all the roles involved in an innovation ecosystem. The concept of innovation ecosystem refers to the set of people, institutions, policies, and resources that promote the translation of new ideas into products and processes (Freeman, 1988; Nelson, 2002; Foray 2009). Several elements are indeed involved in generating innovations, making the overall ecosystem quite complex (Milbergs, 2005; Maggioni and Del Giudice, 2006).

The aforementioned models are thus highly useful in capturing the complex interplay of involved roles within an innovation ecosystem. However, according to the literature on the topic of social innovation and the analysis of these existent models, the lack of an actor that could play as intermediary among all the involved actors, as a sort of innovation catalyst. None of these models actually foresee an actor that plays the role of a pivot in guiding the action of all other actors. This gap is the starting point of the present work, aimed at investigating the usefulness of developing a new model in which the central role is covered by the innovation catalyst, a specific actor that could foster the enhancement of social innovation. This kind of actor, in fact, becomes fundamental because the direct and indirect actors of innovation are very different from one another and this diversity could prevent them from collaborating with ease. Thus, the need for intermediaries that can create the necessary link among the involved actors is widely felt. In fact, there is a notable absence of intermediaries capable of connecting demand and supply and finding the right organizational forms to put innovation into practice (NESTA, 2007; Westley and Antadze, 2010). As it plays the unique role of combining actors' objectives, facilitating interaction and collaboration among them and protecting, at the same time, the entire ecosystem, the innovation catalyst can meet this need.

In this sense, the aim of this paper is to understand the role that an innovation catalyst covers and its key features. More specifically, the paper investigates the following research questions: how may the innovation catalyst foster social innovation in an innovation ecosystem (RQ 1)? how should the innovation catalyst operate (RQ 2)?

To answer these research questions, the paper focuses on Trento Rise, one of the most important examples of innovation catalysts in Italy. TrentoRise is based in the Trentino Region, an area that has become one of the best examples of virtuous and innovative ecosystem in recent years, as well as a centre of excellence in Italy and Europe, particularly in



ICT technologies. Trento Rise is a public organization owned by the largest research institution in Trento - the “Fondazione Bruno Kessler” - and by the Department of Information Engineering and Computer Science (DISI) of the University of Trento.

**Alberto Ferraris  
Cecilia Grieco**  
The role of the innovation  
catalyst in social  
innovation - an Italian  
case study

Thus, this paper enriches the stream of literature on innovation models and the ecosystem, on social innovation and, at the same time on intermediaries in the innovation process. The new actor we propose is capable of promoting and fostering social innovation in a innovation ecosystem, stimulating close cooperation and synergy among all its actors. This is the main contribution of the paper because there are many practical examples in the world, but very few studies that analyze them or provide an overview of these topics in order to highlight the role covered by the innovation catalyst and the key features that it should have.

The remainder of the paper is organized as follows: in the next two sections a theoretical overview of the academic literature on social innovation is outlined, along with a description of the models that have been developed to analyze the phenomenon. Afterwards, the results of the analysis are presented, underlining the main features of a successful innovation catalyst. Finally, our findings are discussed and conclusions, implications and future research avenues are proposed.

## **2. Social innovation**

Among the first definitions of social innovation, the one coined in 2000 by the Local Economic and Employment Development Committee (LEED) of the OECD in the framework of its Forum on Social Innovation (FSI) is noteworthy. This was a multi-stakeholder forum, created with the main objective of facilitating international dissemination and transferring the best policies and practices in social innovation. The definition they came up with focused on the concepts of change, organizational change and changes in financing, and relationships with stakeholders and territories. Basically, social innovation aims at finding new answers to social problems. This can most often happen in two ways: by identifying and delivering new services that improve the quality of life of individuals and communities and by identifying and implementing new labor market integration processes, new competencies, new jobs, and new forms of participation, to contribute to the improvement of the position of individuals in the workforce (OECD, 2010).

The need for social innovation arises from many social challenges that are resistant to conventional approaches for their resolution. Social innovation means new responses to those needs and challenges, not only with its outcomes, but also with the processes it implements.

In the OECD definition a strong link between social innovation and local development is highlighted. Social innovation is a way to improve individual and community welfare, and explicit reference is made to new relationships with territories.

Social innovation aims at modifying the overall system in which social entrepreneurship can take form, creating the right framework and the strategy in which it can develop and operate (Phills *et al.*, 2008).

The differences between business innovation and social innovation have been investigated in depth (Mulgan, 2006; Pol and Ville, 2009; OECD, 2010). The main difference lies in the fact that business innovation aims at introducing new types of production or exploiting new markets in themselves, while social innovation is completely driven by the goals of public good. However, it must be noted that this view is not shared by all scholars (Pol and Ville, 2009).

Somehow it could be argued that business innovations also generate benefits not only to the innovator, but also to other parties, such as consumers and competitors, through a process that they called innovation spillover. From this perspective, the concept of social innovation adds nothing to what we already know about innovation in itself and is too vague to ever be useful.

Nevertheless, the key aspect is the way in which social innovations benefit human beings. The implied idea within this concept is that social innovation has the potential to improve either quality or quantity of life (Pol and Ville, 2009).

Interesting examples of social innovations can be found both in public and private sectors, as well as in the household and grant economies (Murray *et al.*, 2010). Examples from the public sector are projects such as the GOVJAM initiative, where both public and private employees meet for 48 hours to build and design projects that can be useful to the community, and share them on web portals. This is an example of open forms of consultation and participation that are good ways to solicit citizens' ideas and opinion. In the private sector, the creation of social businesses is a powerful way to promote social innovation.

Among the main examples, the Shokti Doi yogurt, from the joint venture between Danone and Grameen Bank, is a product developed especially for children in Bangladesh, as its composition has been studied to meet their specific nutritional deficiencies. Examples from the household economy consist in those forms of mutual action among individuals. This often happens through customer-managed tools, such as platforms for group purchasing or co-produced services like NeturalFamily, a web community that was created to help mothers re-entering the job market. Finally, the grant economy can be an important source of social innovation and in fact this is usually its most common site. In this context, social innovation can be supported through donor platforms or mission-related investments, but also by promoting training and formation, like in the Think for Social initiative, promoted by the "Fondazione Vodafone Italia" to find and support social innovation projects where new technologies are exploited to meet emerging social needs.

### **3. How to foster social innovation in an innovation ecosystem**

Innovation is really difficult to grasp and appreciate in its complexity and it is unpredictable because it is linked to creativity (Bresciani, 2010; Bresciani *et al.*, 2013). Being innovative means having the ability

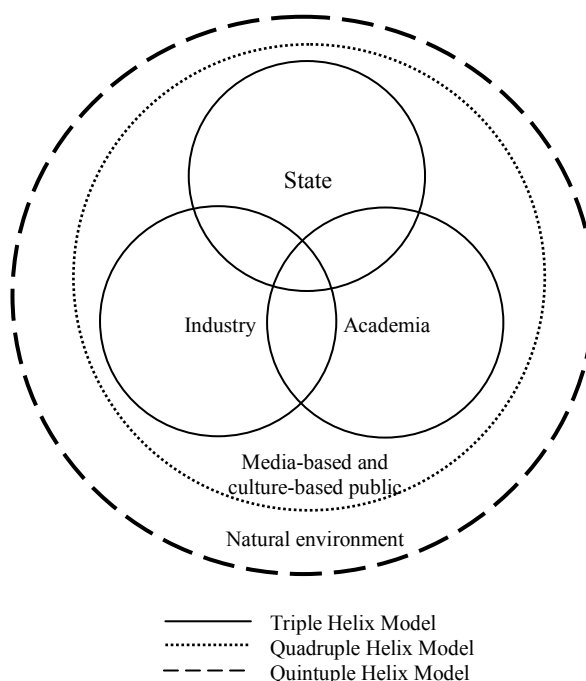
to analyze the shortcomings of the present, but above all, to imagine the challenges of the future (Heunks, 1998; Bresciani and Ferraris, 2012). Moreover, an innovation process cannot be engineered, designed from the top or a drawing board, but it is only possible to increase the probability that the innovation takes place (Chesbrough, 2003; Vrontis *et al.*, 2012). This probability tends to increase in societies where there is a greater inclination towards innovation (Krause, 2004). If an innovation cannot be engineered, it is fundamental to implement an innovation ecosystem that makes it permanent, stable and self-generating in order to increase the likelihood that it emerges (Adner and Kapoor, 2010; Ferraris and Santoro, 2014).

Within this ecosystem, several actors are involved in social innovation processes, and many studies are aimed at analyzing their roles. In their contribution on scaling-up processes, Westley and Antadze (2010) identified the dynamics that affect the relationship between the supply and demand for social innovation, underlining the role played by the different actors. First, they mention the vulnerable group, or the intractable social issue, that demands social innovation for its breakthrough. In response to this demand, socio-entrepreneurial organizations strive to attenuate their needs.

On the other hand, this supply cannot be financed by the users themselves, but a source of financing is needed and can come from governments, charitable foundation, or both. The success of grant proposals depends not only on the evident needs of the vulnerable client group, but also on the skills of the grant writers in mediating such needs so as to fit in with the priorities of government programs. These priorities are highly affected by news media or research units that set the agenda for the government with regard to a particular vulnerable group or issue. This underlines how social innovation requires a variety of actors working in concert or separately.

Thus, innovation processes are interactive. They can be better studied intellectually by specifying the actors and their links (Cooke *et al.*, 1997). This study may be performed by using the models that have been developed to explain how innovation emerges from the interaction of different parties. In this sense, the Triple Helix Model, as developed and described by Etzkowitz and Leydesdorff (2000), is an important landmark within this field of study. It has been advocated as a useful method for fostering entrepreneurship and growth by analyzing the existing dynamics between three helices: state, academia, and industry.

In a knowledge society, the Triple Helix thesis is that the potential for innovation and economic development lies in a more prominent role of the university and in the hybridization of elements from universities, industries and the government to generate new institutional and social formats for the production, transfer and application of knowledge (Ranga and Etzkowitz, 2013). As the authors stated, the relationship between the three actors span networks that enable and constrain fluxes of communication. Within this model, all actors should have the same weight in the relations system, as together they generate a knowledge infrastructure in terms of overlapping institutional spheres, with each taking the role of the other and with hybrid organizations emerging at the interfaces (Etzkowitz and Leydesdorff, 2000).

*Fig. 1: The evolution of helices models*

Source: adapted from Carayannis and Campbell (2010)

The Triple Helix model has been widened, with the addition of elements that were supposed to better complete the framework from which innovation can emerge. To this end, Carayannis and Campbell (2009) added the element of the public as a fourth helix, and more precisely identified as the “media-based and culture-based public”. The authors justify the introduction of this helix by explaining how both culture and values and the way in which reality is constructed and communicated by the media highly influence every national innovation system. Public discourses are transported through and interpreted by the media and are crucial for a society to assign top priorities to innovation and knowledge (see Figure 1).

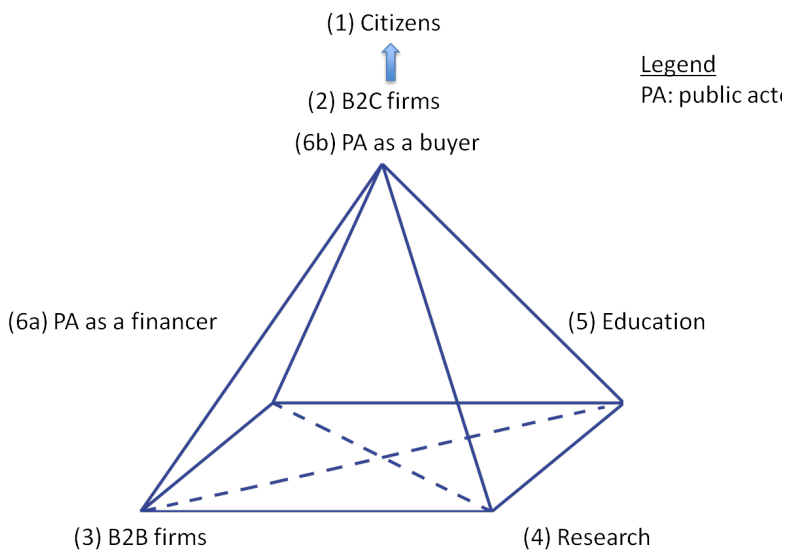
Afterwards, the same authors kept enriching the model by adding a fifth helix that links to the established model, i.e. the role of the “natural environment or natural environments of society” (Carayannis and Campbell, 2010). With this configuration, the renewed Quintuple Helix model becomes an analytical framework for sustainable development and social ecology and outlines what sustainable development might mean and imply for eco-innovation and eco-entrepreneurship in the current scenario.

Apart from the academic literature, a new managerial model has been proposed by Giunchiglia (2013). He moved a step away from the helices structure, proposing an innovative framework to analyze the involved

actors under a pyramidal perspective that better suits the peculiarities of social innovation. In the Social Innovation Pyramid, actors are distributed among the top and the bottom (see Figure 2). At the top, the first actor is the citizen, or the entire society in a wider perspective, with the final purpose of improving his or her quality of life. At the top of the pyramid an important role is also played by firms that bring about an innovation of services and products in a B2C business model, and by the Public Administration (PA) as buyer and main user of new products or services, making the creation, bootstrap and evolution easier. This also facilitates environmental sustainability in a long time perspective because of its being the main user and creator, thus laying the foundation for the future increase of private participation.

**Alberto Ferraris  
Cecilia Grieco**  
The role of the innovation  
catalyst in social  
innovation - an Italian  
case study

*Fig. 2: The Social Innovation Pyramid*



Source: adapted from Giunchiglia (2013)

Other actors are involved at the bottom of the pyramid: a) firms which provide technological innovation, either as services or products, to other firms in a B2B business model; b) the research system that provides know-how and skills to those firms; c) training and high training systems, which provide new personnel and transfer knowledge on a large scale, either to firms or to the research system and; d) the public actor who plays the role of a financier. These are the direct stakeholders of innovation, while the indirect ones are the political and the social parties systems and private lenders, including venture capitalists.

Giunchiglia (2013) highlights that the direct and indirect stakeholders of innovation are not sufficient to create an innovation ecosystem because of their diversity, which prevents them from collaborating with ease, in

particular under three important dimensions: roles and responsibilities, objectives, and time.

Concerning the first dimension, research produces new knowledge and new researchers while training institutions must transfer skills; service companies (such as those that provide energy, mobility, connectivity) and the public actor provide services, while companies provide new technology systems. As for the second, researchers have the objective of expanding human knowledge, educators that of training students to quality, companies that of generating profit, and the public actor that of providing the best services at the lowest possible cost. Finally, regarding the third dimension, it is clear that three years in research is a short period (just enough to build a new skill), for one year of training is often the minimum unit necessary to measure results, while for companies the basic unit of time is a month because they have to pay monthly salaries. This diversity of roles, responsibilities and time frames makes collaboration among the actors of the innovation ecosystem more difficult.

This overview underlined the wide range of actors that social innovation requires. What emerges, however, is a lack of an intermediary that could in some way act as a link between the various actors involved. In this sense, social innovation can be seen as the result of a combination of “bees” and “trees” (NESTA, 2007). The former are small organizations, individuals and groups who have new ideas, while the latter are large organizations such as governments or big companies which are generally poor at creativity but good in implementation and have the resilience, roots and scale to make things happen.

The problem in this picture is how to connect the bees and trees. This need is also highlighted by the OECD (2010) that, in developing policy recommendations, express their need for intermediaries, as their absence in the social field is seen as a key reason why too few innovations succeed.

The solution is the creation of a convergent interaction among the actors, aimed at producing concrete results, safeguarding both the specificity of each component and the diversity inherent in the ecosystem. What is needed, in other words, is a component that promotes and accelerates the process of creating innovation, and this the premise from which the innovation catalyst can arise.

Even if the literature review highlights the need for this kind of actor, the analysis of the existing models shows that an innovation catalyst has not been foreseen by any of them. Nevertheless, our study on the Trentino innovation ecosystem led us to conclude that in some cases, the innovation catalyst actually plays a pivotal role in fostering the enhancement of social innovation.

Thus, in this paper, we highlight the importance and the relevance of this missing actor and the key features that it should have in order to fully satisfy its role of fostering social innovation within the ecosystem.

#### 4. Methodology

Alberto Ferraris  
Cecilia Grieco  
The role of the innovation  
catalyst in social  
innovation - an Italian  
case study

This paper comes from an extensive study on the Trentino's innovation ecosystem which was sponsored by the University of Trento. Subsequently, the analyzed data are used to explore two research questions, "how the innovation catalyst can foster social innovation in an innovation ecosystem (RQ 1)" and "how the innovation catalyst should operate (RQ 2)".

The case study is an effective illustration of one organization's approach to multi-actors management in an innovation ecosystem, in order to foster social innovation. The case study (Yin, 2003; Eisenhardt, 1989) is not meant to be generalizable, but rather is utilized here to inform about the theoretical development of the roles, tasks and benefits of a catalyst within an innovation ecosystem. The case site was chosen as an exemplar case to explore how this particular intermediate helps manage the relationships between different actors with the final aim to foster innovation.

The case study approach is useful in such exploratory modes of research and can provide detailed understanding of particular situations which may be useful to improve theory, in this case how an innovation catalyst can foster social innovation. Moreover, a case study analysis is appropriate when inquiring into a 'how' or 'why' question about a contemporary set of events, over which the investigator has little or no control (Johnson, 2008). In this case an explorative approach has been adopted, and the study has been based on the single-case (holistic) model (Yin, 2003).

The data used in the case study of TrentoRise have been collected through detailed interviews with actors from the Trentino ecosystems: 22 interviews lasting an average of 2 hours were conducted. The in-depth interview was identified as the most appropriate method to meet the aims and objectives of the research. However, primary and secondary sourced documents were also analyzed. The decision was to interview people who: a) cover key positions within Trento Rise; b) have decision making power within Trentino's main stakeholders (such as universities, research centers and public government departments). These people were chosen in order to give a more fine-grained picture of the whole ecosystems' functioning, of the complex interaction between all the stakeholders and of the role of TrentoRise.

TrentoRise is the innovation catalyst of the Trentino ecosystem. It is a fully operational institution merging the ICT branch of the largest research institution in Trento - the "Fondazione Bruno Kessler" - with the Department of Information Engineering and Computer Science (DISI) of the University of Trento, in a wide spectrum of scientific areas and human sciences. Its main goal is to combine all the actors' objectives, facilitate their interaction and collaboration and protect the entire ecosystem. To do that, it develops relationships with the local territory but also at a European level. In fact, it is a core partner of the European Institute of Technology (EIT) ICT Labs (the European answer to MIT) and part of EIT ICT Labs Italy. This entails great advantages in terms of support, prestige, research project coordination and networking.

TrentoRise therefore provides an effective and almost ideal instrument to support the integration of education, research and business dimensions;



in fact, its mission is to “act as an intermediary between research, education and business actively fostering social innovation through ICT”. TrentoRise aims at promoting research to drive the internationalization and innovation of the territory and at becoming one of the leading hubs in ICT sector in Europe. Its activities are developed to: a) promote business development through innovation projects that meet societal needs; b) promote scientific research that creates added value for people, the market and the society at large; c) promote new business creation, fostering highly innovative startups in the ICT sector and d) attract highly motivated students by launching initiatives in the field of higher education that offer not only academic but also entrepreneurial education.

### **5. The innovation catalyst: the case of TrentoRise**

In this section we propose an in depth investigation of the case study (TrentoRise), developed using the information collected through interviews and documents, to highlight the tools and the activities that were implemented to promote social innovation within the innovation ecosystem, and the main flagship projects carried out by the catalyst.

In the Italian context an excellent example of innovative ecosystem has been developed in the Trentino Region, an area that has recently become one of the most important and virtuous centres of excellence in Italy and Europe, in particular in the field of ICT technologies. Trentino is, with South Tyrol, one of the two provinces of the Trentino-Alto Adige/Südtirol region, designated as an autonomous region under the Italian Constitution.

Within this ecosystem, the involved actors are: the University of Trento (in particular the ICT Branch), the “Bruno Kessler” and the “Edmund Mach” foundations (public research centers), the private research centers of Telecom and Microsoft, the Public Administration of Trentino (PAT), indigenous firms and citizens. TrentoRise uses different tools to promote social innovation within the ecosystem, such as the Pre-commercial procurement (PCP) and “Trentino as a Lab” (TasLab). It also proposes several activities and, at the same time, it coordinates several projects throughout the territory. This highlights how TrentoRise is actively involved in all the projects and initiatives in the Trentino Region.

In particular, the main instrument used by TrentoRise in order to foster innovation is the PCP. PCP is a process empowering public authorities to buy the technologically innovative solutions that fit their needs. Public procurers act as first buyers who share the benefits and risks of overseeing technology from its early stage research to pre-commercial products with suppliers. It focuses on domains where no commercial solutions exist on the market yet. PCP is, in essence, a mutual learning process for procurers, users and suppliers to obtain firm confirmation about both functional needs on the demand side and the capabilities and limitations of new technological developments on the supply side, when it comes to tackling a concrete public sector problem (European Commission, 2008).



First-buyer involvement in the early phases of industry R&D delivers better products at lower costs. Moreover, PCP dramatically reduces the risks and the cost of failure at a deployment stage for both procurers and suppliers. Putting several suppliers in competition to develop solutions at the pre-commercial stage ensures healthy competition and contributes to ultimately getting the best product at a favorable price. PCP can also attract venture capitalists who are looking for promising opportunities offered by the SMEs involved in such projects. In addition, PCP shortens the time-to-market by better aligning product development with customer needs, and it enables the creation of long-lasting growth and jobs and new sectors of industrial leadership through the planned innovation of public services.

Another tool that TrentoRise uses to foster social innovation is “Trentino as a Lab” (TasLab), which enables the area to test solutions before going to market and produce advantages both for the company and the territory. Users are able to participate in user-experience research activities as well as participatory design activities. Citizens’ participation in the “laboratory” is gamified in order to ensure long term commitment, community building, and trust among the members of the community. This is also useful for attracting enterprises in co-location centers in order to develop R&D programs and create synergy with research and education areas but also in discovering co-financing and IPR Sharing.

Moreover, TrentoRise promotes several other activities for the growth of the collective consciousness in society, such as: a) ICT Days: an annual event for the sharing and development of awareness among the population and the major stakeholders of innovation, about (the process of) social change and its proactive management; b) Territorial Seminars: decentralized intermediate events for the growth of awareness among the population, about (the process of) social change and its proactive management; c) Social Innovation Laboratories (SIL): work roundtables with the main stakeholder groups for the proactive management of social change; d) TEDx: an international event of global significance for raising awareness about the most innovative ideas developed on a national and international reference topic “quality of life” and “social innovation”.

Finally, three main flagship projects are currently active in Trentino thanks to the TrentoRise coordination: Open Data Project in Trentino, Big Data Project and Smart Campus. These projects have been carried out in collaboration with public and private partners to make Trentino an intelligent and competitive territory with high potential and an excellent quality of life.

As concerns the first project, the Autonomous Province of Trento, TrentoRise and other business actors (Informatica Trentina S.p.a., SpazioDati S.r.l.) and research institutions (Università di Trento and Fondazione Bruno Kessler) endorse the “Open Data Project in Trentino”. It aims at publishing data held by all the departments of the Province to generate accountability, transparency and foster economic growth, as expressed in the guidelines for the reuse of public data in official documents. At the same time, the team focused on the creation of the “Data as a Culture” project through educational actions both inside and outside the involved authorities. An example of this consists in the “School of Data” project organized by the

“Fondazione Bruno Kessler” and “Open Knowledge Foundation” with the purpose of disseminating tools and the best practices for the re-use of data.

Regarding the second project, Big Data Project aims at developing a platform for delivering advanced services to a wide range of users and applications. The platform consolidates all the knowledge that is currently produced in Trentino by public and private bodies with the purpose of promoting services, research and development, and enabling the citizens to have a better quality of life.

As far as the third project is concerned, Smart Campus aims at empowering the citizens of a smart city by giving them a more active role in designing, developing and delivering the services they want and like. Trento has thus become a true “smart city” where students, researchers, and institutions interact with each other and where Smart Campus becomes a lab and a community at the same time. The lab builds a social and technical environment for collaborative service design and personalized service delivery. The community is composed by all the students, researchers and staff who use the services and participate in their creation.

The above mentioned activities and projects are all in line with the findings of Almirall *et al.* (2014) in their study of open innovation in an innovative ecosystem and in smart cities.

## 6. Main findings and discussion

The process of innovation needs to be continually fed by new ideas, new knowledge and new projects, also from a sustainable perspective that aims to improve society for future generations (Bresciani, 2009; Del Giudice *et al.*, 2010; Tardivo *et al.*, 2011). In this context, the presence of an innovation catalyst that attracts each stakeholder, uniting them, leaving them unchanged, and bootstrapping new initiatives, is crucial.

The analysis of the case study shows that an innovation catalyst must be an agile structure and should not be afraid of the risk, but rather it should be guided by ideas and results-oriented. Another interesting result consists in the organizational structure and the employee of the catalyst. In fact, TrentoRise is not based on hierarchy, rather, it has a lean and simple structure and hires qualified personnel (20% of its employees have a PhD) or experienced managers in the key positions of the organization. Moreover, from the interview it clearly emerges that an innovation catalyst should have a strong link with the territory in which it operates (OECD, 2010), but at the same time it should be open to the world, because change is global. In short, an innovation catalyst must act within a glocal perspective that is the basis of the creation and functioning of ecosystems of successful innovation. Only in this way will it have the necessary flexibility to manage and anticipate this change.

Another fact that clearly emerges from our analysis is that an innovation catalyst should operate mainly, if not exclusively, through public-private partnerships. It should only work for completed projects,

and always within a guarantee of sustainability of the exploitation of the results once the project is finished.

Finally, it is crucial that the various collaborations must be enabled via incentives. As it makes no sense to impose innovation from the top, project activities aimed at increasing the probability of generating innovation cannot be imposed. Only those who see a chance to return, measured according to its own value chain in the initiative, will tend to participate. This is also the way to ensure medium to long term sustainability, even after the end of the project (Phills *et al.*, 2008).

TrentoRise is similar to other organizations in the world, such as the Defense Advanced Research Projects Agency (DARPA) in Silicon Valley and VINNOVA in Sweden. In fact, in the Silicon Valley, DARPA, despite being officially based in Arlington (Virginia), has played a crucial role in the birth and development of the region. Founded in 1958 as a response to the Soviet Sputnik, DARPA is an agency of the Department of Defense in charge of the development of new technologies for military use. The first beneficiaries of the substantial funding provided by the federal government were companies such as Fairchild, and universities like Stanford that are the backbone of the Silicon Valley. DARPA has not only acted as a lender, but also as a true innovation catalyst, working alongside largest companies such as Intel, and top universities like Berkeley, Caltech and UCLA.

VINNOVA, instead, is the Sweden agency of innovation, which aims at strengthening innovation capacity, supporting sustainable growth and benefiting society. VINNOVA invests about 2 billion SEK (200 million euro) every year, and can count on two hundred employees. It mainly promotes collaboration between businesses, universities, research centers and the public sector, encouraging greater use of research, making long-term investments and creating catalytic meeting places.

In conclusion, the people we interviewed clearly show how other similar innovation catalysts have played a fundamental role in foster innovation in other prestigious ecosystems in the world and compare the role of these organizations with the role of TrentoRise in the Trentino Region.

However, TrentoRise obviously differs from these larger catalysts, mainly because it operates in a smaller ecosystem. Here, the key fact is that every innovation catalyst must be adapted and functional to the ecosystem in which it operates.

Alberto Ferraris  
Cecilia Grieco  
The role of the innovation  
catalyst in social  
innovation - an Italian  
case study

## 7. Conclusions and implications

### 7.1 Conclusions

This paper highlights the basis for the successful implementation of social innovation in an ecosystem. In this paper we refer to social innovation and underline the fundamental role of the innovation catalyst in fostering the development of innovation ecosystems (Giunchiglia, 2013). Thus, this paper inserts itself within a literature and research gap because mainstream models of innovation such as the Triple Helix Model and its subsequent developments do not provide an innovation catalyst. Highlighting the

existence, role, activities and features of this new actor allows us to fill this gap in the literature and, at the same time, to align theory with practice.

In order to do this, we analyzed the Trentino Region, a centre of excellence in Italy and Europe, which has recently become a virtuous example of an innovation ecosystem. The wide range of the stakeholders involved in the ecosystem and their diversity suggest the need of an innovation catalyst that activates a permanent process of innovation through close cooperation and synergy among all actors. In Trentino this role is covered by TrentoRise, an example of an innovation catalyst that improves the quality of the relationships among the actors, favors innovation development and protects the entire ecosystem.

Therefore, the analysis we have carried out provides answers to our research questions. Trentino's example shows that a healthy ecosystem may be developed when all the actors' objectives are aligned and when a new actor, the innovation catalyst, plays the role of an intermediary, facilitating interaction and collaboration among the actors and ensuring that every component will maintain its specificity and autonomy.

The main instrument used by TrentoRise in order to foster innovation is the PCP. The first results in this territory have been positive. Eight PCP tenders are already in their execution phase, seven PCP tenders have been launched (some of which have an individual value of more than 4 million euro), 5 EIT ICT Lab projects are in execution and 6 Industrial research centers (as well as 9 additional start ups) are currently co-located with TrentoRise. However, through the interviews that we have carried out, it clearly emerges that an innovation catalyst is fundamental for each of the actors involved in the ecosystem, and this is also demonstrated by the fact that TrentoRise is actively involved in all the projects and initiatives in the Trentino Region.

This organization provides organizative and financial support, increases trust in the partners' cooperation, leading to lower transaction costs, and pushes innovation creation and sharing among all the members within the ecosystem (citizens included).

Trentino as a Lab (TasLab) and the other activities carried out by Trento Rise throughout the territory have drawn the attention of Italian and European governments and citizens showing that in order to foster social innovation in a contemporary society an actor that works as a catalyst/intermediary is fundamental (NESTA, 2007; Westley and Antadze 2010). Also, the aforementioned flagship projects allow a small city like Trento to cover the first positions in the Italian Smart City ranking (Smart City Index, 2014).

Positive evidence is therefore linked with the development of the territory. Thus, Trentino has obtained numbers in relation to the EU average such as: 2.19% of GDP invested in R&D activities, 6.1 Employed in R&D every 1000 inhabitants, 1 University, 12 public Research Centers and 6 Industrial Research Centers. It is also the region with the lowest unemployment rate in Italy, 5% of the total population, 12.5% of the young people, while the average in the rest of Italy is more than 40 per cent. Furthermore, it is the first region in Italy regarding citizens' quality of life. This data shows how the region has become one of the most innovative

in Italy and a node of an important European ICT Network. Moreover, direct and indirect data have demonstrated how an innovation catalyst has a positive role in order to develop innovation within an ecosystem (RQ 1).

**Alberto Ferraris  
Cecilia Grieco**  
The role of the innovation  
catalyst in social  
innovation - an Italian  
case study

Also, the analyzed case allows us to outline some key features that an innovation catalyst should have: TrentoRise is not based on hierarchy, rather it has a lean and simple structure and hires qualified personnel (20% of its employees have a PhD) or experienced managers. TrentoRise has a strong connection with the local area and all local actors, but at the same time it is globally oriented, attracting firms, venture capital, business experts and qualified researchers. Also, TrentoRise mainly co-operates through public-private partnerships with territorial research centres, which are founders with small and big firms operating throughout the territory (or with those that have opened labs within TrentoRise structures) and its purpose is the innovation of local society, generating new forms of innovation obtained by increasing existing ones. Following this case study, all these features should be possessed by a successful innovation catalyst (RQ 2).

## 7.2 Implications

Summarizing, the main goal of TrentoRise is its contribution in identifying innovation boundaries and in maintaining the ecosystem in good health, while supporting the interaction among its single components. Thus, the district is the place that offers a solid basis for firms in order to maintain the competitive advantage achieved through innovation in time. The district also contributes to realizing positive network externality for small and medium firms (Becchetti *et al.*, 2007), training and attracting big multinational enterprises and maintaining a high level of innovation content in their offer (Bresciani and Ferraris, 2014).

This paper brings contributions both for academic and for policy makers. From the academic point of view, it enriches existing innovation models and proposes a new actor that plays a unique role within the ecosystem, thus fostering social innovation. From the policy makers' point of view, a deeper knowledge of this topic allows us to understand how to develop scalability strategies and replicate the model in other areas, helping regional policy makers develop similar models according to the districts' characteristics. In fact, our case study suggests how an innovation catalyst is important and underlines its key role in developing a healthy and functioning ecosystem for innovation.

The major limitations of this work are that the analysis has focused only on one case of innovation catalyst and that the Trentino ecosystem is smaller than others. Moreover, Trentino is a Special Administrative Region, where 90% of the taxes remain in the territory and are not redistributed on a national level. However, TrentoRise is the most important example of innovation catalyst in the Italian context so we decided to focus on it as we still are in an initial stage of our research. This offers an avenue for future research. On the one hand, the focus of the analysis could be broadened to other countries, even to investigate if country differences are evincible. On the other hand, additional investigation on this topic would allow the definition and development of a brand new model of Social Innovation that

hinges on the role of innovation catalyst. Moreover, it could be useful to compare this case study with an unsuccessful one.

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**Alberto Ferraris  
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The role of the innovation  
catalyst in social  
innovation - an Italian  
case study



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# Exploring structural capital from the business administration perspective: a general framework on the existing literature<sup>1</sup>

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## Abstract

**Purpose of the paper:** *The aim of this paper is to identify the best way to manage and assess structural capital in the context of the current world situation and to define its profile in terms of management and evaluation aspects. In order for these intangible assets to be defined, structural capital is first analyzed and classified according to its relevance to a company's core business.*

**Methodology:** *The research approach follows a qualitative methodology, applying a single method approach. Secondary data were investigated through a research protocol.*

**Findings:** *The findings of this research are based, first, on organizing international literature concerned with structural capital in order to identify its strong and weak points in terms of its management and economic evaluation. We have introduced a general approach to managing structural capital under specific circumstances with the objective of creating long-term value for companies.*

**Research limitations:** *The limitations of the paper depend upon its theoretical format. The general framework used to describe the management and evaluation of structural capital originates from an updated understanding of the concept, derived from the literature on the topic.*

**Research and management implications:** *The objective of categorizing structural capital is to associate a suitable management strategy to each structural capital category with the purpose of gaining strategic advantage and creating value.*

**Originality of the paper:** *Structural capital encourages the circulation of knowledge within a company and stimulates the creation of long-term value. Strategic value and the unique nature of structural capital makes such a classification of structural capital possible, while defining the most appropriate management strategies that can be put into practice by managers.*

*Key words: structural capital; intellectual capital; management; economic assessment*

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<sup>1</sup> This paper is the joint work of the four authors: the "Introduction" and "Findings and discussion" are by Giuseppe Russo, the "Intellectual Capital in the Knowledge Economy" and "Conclusion, limits and perspectives" sections are by Rosa Lombardi, the paragraph entitled "Structural Capital and the Management Perspective" is by S. M. Riad Shams and the "Structural Capital and the Economic Evaluation" and "Research Approach" paragraphs are by Federica Evangelista.

## 1. Introduction

Over recent decades, international literature (Lev, 1999; Guthrie and Petty, 2000; Stewart, 1997) has actively examined the concept of intellectual capital.

Although the taxonomy concerning this topic is varied, this paper is concerned with analyzing structural capital and the aspects describing its management and assessment. The objective is to offer an updated concept and understanding of this topic to the academic community and experts in this field.

Our research aim is to define the role of structural capital in contemporary companies (Zanda, 2011) and look at how it can be managed in the right way. Social interaction leads to the exchange of thoughts, ideas and opinions. Knowledge-sharing can increase company knowledge, promoting the development of new structural capital and resulting in an increase in competitive advantage.

International literature on this topic was examined using a qualitative research approach based on the presumption that the creation of long-term value is generated through the very best management of structural capital.

The organization of the article is the following. After the introduction, section two analyzes literature relating to intellectual capital and structural capital, its management profile and economic appraisal. Section three describes the adopted research approach. Section four illustrates the research results. Section five presents the final considerations, the limitations and future orientation of the study.

## 2. Literature review

### *2.1 Intellectual Capital in the Knowledge Economy*

Ever since the 1990s, focus on knowledge has resulted in confirming the strategic role played by intellectual capital (Petty and Guthrie, 2000; Kaufmann and Schneider, 2004).

Intangible assets are considered as a range of intangible resources that, if correctly appraised within company management (Darroch, 2005; Du Plessis, 2007), lead to an increase in long-term company value (Chen *et al.*, 2005).

The OECD (1999) considers intellectual capital to be the economic value of two categories of intangible company resources: structural (or organizational) capital and human capital. The structural capital of a company refers to factors linked to computer systems and distribution networks; human capital includes internal company resources (personnel) and external company resources (customers and suppliers). This definition makes a specific distinction between the terms “intellectual capital” and “intangible resources”, as they are often mistakenly used as synonyms.

According to Sullivan (2000), human capital is one of the elements that make up intellectual capital, but he also included it among intellectual

activities. These activities originate from human capital and represent the sources of innovation that the company can commercialize (programmes, database, documents, design and methods).

Arvidsson (2002) defines a model, The Intangibles' Network (TIN model) used to identify five classes of intangible intellectual capital. These are human intangibles, relational intangibles, organizational intangibles, R&D intangibles and legal intangibles; moreover, she draws up a formal definition of the main aspects of intangible assets.

Peterseons and AF-Bjurstrom (1991) highlight another definition of intangible resources. These authors classify company intangibilities into three macro categories: human capital, market capital and confidence capital. Human capital includes the set of qualities describing the resources used within the company, such as leadership (Bennis and Nanus, 1985; Bradford and Cohen, 1984; Friedman, 1985; Mintzberg, 1973), motivation, know-how and the ability to achieve objectives. Market capital involves translating the perception that customers have of the company and its products. Confidence capital indicates the opinions and behaviour of company stakeholders with regard to the company, as well as how capable the company is of proving its reliability.

Edvinsson, Saint-Onge and Petrash (Edvinsson and Malone, 1997) have devised a model called the Value Platform, used to identify the inter-relationships that are important for creating value. The authors recognize human capital, organizational capital and customer capital as elements of intellectual capital.

Stewart (1997b) identifies intellectual capital as "*all intellectual material - knowledge, intellectual features, experience - that may be made available to create wealth*". According to the author, intellectual capital consists of three conceptual dimensions: human capital, relational capital and structural capital.

Structural capital represents coded and non-coded company knowledge, technology, inventions, formal and informal organizational procedures, best practice, patents, databases and intranet networks.

We can certainly declare that these immaterial assets were not often assessed by companies in the past. When companies and managers began to understand their importance in achieving competitive advantage and creating value, they attracted the attention of scholars who then started to analyse, study and attempt to define them.

## 2.2 Structural Capital and the Management Perspective

Structural capital is an expression of the organizational and management aspects of a company; it can be defined through a range of coded and uncoded knowledge about a contemporary company.

Several authors (Sullivan, 2000) examine the intellectual activity that derives from intellectual capital-produced innovation. Intellectual assets include programmes, inventions, processes, databases, methodologies, industrial projects and intellectual property rights (patents, copyrights, brands, trade secrets) and all similar aspects over which the company can claim property rights.

Federica Evangelista  
Rosa Lombardi  
Giuseppe Russo  
S.M. Riad Shams  
Exploring structural  
capital from the business  
administration  
perspective: a general  
framework on the existing  
literature

Edvinsson and Malone (1997) further classified structural capital into organizational, process and innovation capital. Organizational capital includes the organization's philosophy and its systems for exploiting its capabilities. Process capital includes the techniques, procedures and programmes that can be implemented to enhance the delivery of goods and services. Innovation capital includes intellectual property and intangible capital. Intellectual property involves protected commercial rights such as patents, copyrights and trademarks. Intangible capital includes all other expertise and the ideas used to run an organization.

For Sveiby (1997), structural capital (or internal structure) includes the range of patents, models, administrative systems and software that are created by employees and owned by the organization. Company culture is also contained within this definition.

Company culture plays a very important role in the development of organizational aspects that can generate, manage and maintain intellectual capital within an organization. It includes a range of rules, values and principles that affect the decisions made by company employees.

This generates the dynamic interdependence between human capital and structural capital. The knowledge and skills of each individual play a very important role in the creation of structural capital. Individual knowledge is appraised, circulated among company employees and transformed into action.

Because of the role played by structural capital in the creation of value, there is the need to develop methods by which it can be managed, making knowledge more widely available throughout the organization (Sánchez *et al.*, 2000).

Boisot (2002) states that structural capital is where the value added to the company by non-linearities within the knowledge creation process apparently resides.

Snell *et al.* (1999) analyze the strategic value of a company's structural capital in terms of two dimensions: idiosyncratic dimension and strategic values. The relevance of these assets grows as they contribute towards the creation of a competitive differentiation (Collis and Montgomery, 1995).

With an increase in the uniqueness of structural capital, companies are encouraged to invest more resources in its capital management to reduce risk and capitalize on its productive potential.

Table 1 (Structural Capital Matrix) shows the different types of structural capital, which are classified according to their idiosyncratic dimension and strategic value.

*Tab. 1: Structural Capital Matrix*

		Strategic value	
		Low	High
Idiosyncratic dimension	High	Idiosyncratic structural capital	Core structural capital
	Low	Ancillary structural capital	Compulsory structural capital

Idiosyncratic structural capital (low value and high unique nature) consists of the specific knowledge about the company that indirectly contributes to achieving long-term value. This should be the objective of company investment in order to differentiate the company from its competitors.

Ancillary structural capital is defined by both its low strategic value and low idiosyncratic dimension. This type of knowledge is produced through the company's own operations, but does not create specific value for consumers or the company.

High strategic value and a high idiosyncratic value characterize core structural capital. The employees' core knowledge and their relationship with other agents (suppliers, consumers, stakeholders, shareholders) are institutionalized and codified into organizational practices, databases and intellectual property that are protected by commercial rights.

Compulsory structural capital (high strategic value and low idiosyncratic value) is the general knowledge widely known on the market, which can ensure long-term competitive advantage (Porter, 1985).

An increase in these immaterial assets encourages the circulation of knowledge within the company and stimulates the creation of long-term value (Teece, 2000; Varian, 2005)

Accessibility to company knowledge, in this way, plays a very important role if analyzed from an internal as well as an external perspective.

Starting from the internal perspective, intangible goods must be managed appropriately, as they have a high level of dispersion. This results in the need for collection and coding practices.

A creative approach to coded knowledge presumes that it has been conceived with the new situation in mind.

Creation of knowledge can lead to resistance on the part of stakeholders, who are afraid of losing their prestige and contractual power within the organization. Additionally, when a competitor's knowledge can be imitated there may be ensuing new costs relating to internal personnel and the need for external consultancy.

In order for knowledge to be diffused within the organization, contributing to the creation of new internal capital, the company must develop:

- leadership focused on initiatives concerning knowledge management (Alavi and Leidner, 1999; Bollinger and Smith, 2001), which stimulates personnel to exchange knowledge;
- a culture that encourages the development and use of cognitive capital, including through modern techniques;
- operative systems encouraging employees to share knowledge;
- a reticular, network type of organizational structure where individuals are given shared values and objectives. This kind of structure allows various responsibilities to be outlined and this, in turn, stimulates individuals towards greater creativeness and dynamism in answering external requests.

Structural capital belongs to the organization in its entirety. It may be reproduced and made available to each individual (Stewart, 2002; Daum, 2003).

An analysis of the accessibility of structural capital involves problems relating to knowledge management.

The development and creation of new knowledge also requires substantial investment. Consequently, there is the demand to protect such knowledge from imitation and embezzlement, so that the company may profit from the economic benefits deriving from the creation of an innovative idea.

The protection methods used by contemporary organizations include technical protection and legal protection.

Technical protection limits access to internally developed knowledge by restricting and controlling access. Legal protection allows modern companies to legally protect knowledge that is developed internally against improper use by others, who may use this knowledge without having the right to do so.

The legal or technical protection of structural company capital produces two conflicting results. It stimulates company investment in terms of research and development but, at the same time, it restricts the circulation of knowledge and, as a consequence, the creation of new knowledge resulting from an accumulation effect.

However, communication does not have always a negative effect.

In the current economic environment, there is a key role for highly innovative companies with knowledge assets concerning, in particular, structural capital. In order to increase transparency and promote the understanding and evaluation of the company by its main stakeholders, organizations will increase the number of tools used to communicate, report on market data and provide information about the intangible heritage of the company (Cravera *et al.*, 2001).

In this way, the company can enjoy significant benefits, including an increase in company relational capital, which translates into an improvement of image and reputation.

Therefore, a correct and effective communication strategy will only have positive effects, especially when the strategy is qualitatively and quantitatively differentiated, compared to that of the company's competitors, and addresses innovation (Grojer and Johanson, 1999).

This information is not reported in the financial statements, which are mostly expenditure figures for R&D purposes or investment advice concerning such immaterial assets, but it is of great value, especially on the financial market and for business partners. Such an increase in transparency also has a positive effect on the staff's motivation and sense of belonging, highlighting the company's ability to innovate, create new knowledge and implement the best practice possible, while communication can be used as a marketing tool directed at stakeholders and corporate investors.

By analyzing structural capital, our study has raised the issue of its management. Structural capital has two features (strategic value and idiosyncratic dimension) and, according to their level of significance, this entails managing them in various ways. This perspective must be examined carefully, especially to comply with another point of view, that

of the staff's ability and willingness to share this knowledge and capability among themselves .

Communication of data and information about immaterial assets can be of significant importance to its management.

Federica Evangelista  
Rosa Lombardi  
Giuseppe Russo  
S.M. Riad Shams  
Exploring structural  
capital from the business  
administration  
perspective: a general  
framework on the existing  
literature

### 2.3 Structural Capital and economic evaluation

The economic value of structural capital (Zanda *et al.*, 2005) can be estimated by using one of three main methods: the cost-based approach, value-based approach or real options-based approach.

The cost-based approach (Ford and Ryan, 1981) uses historical cost and reproduction cost to give an estimate of the economic value of structural capital.

The historical cost includes all costs borne by the company that relate to the invention and application process of a technology. This method is not easy to apply: there may be many inter-connected common costs within the variously involved research centres and the total cost may not represent the value of technology adequately. The cost of reproduction represents all the costs that will be incurred in creating something as useful as the technology included in the estimate. This method has some limitations: it is difficult to identify replacement knowledge in terms of usefulness and what is available on the market, and there is also the uncertainty that the costs of creating this technology will lead to the same results.

The value-based approach assesses the future economic benefits that a technology can create for the benefit of a company. Three problems arise, however, when elaborating this estimation: the identification of the flow of expected economic benefits, the choice of how often these benefits must be updated and the definition of the lifecycle of technology.

The flow of expected economic benefits may be in function of the differential in future profit between the economic benefits achieved before the new technology and those that will be achieved after the technology is introduced.

This means that the assessment of technology, carried out by updating the flows of future benefits - at an adequate rate of remuneration for pure capital and risk investment - represents an equal and neutral theoretical value of general exchange that satisfies the seller as well as the buyer. The exchange value of the technology is represented in the following formula (Zanda *et al.*, 2005):

$$W_x = \sum_{s=1}^k C_s (1+i)^{-s}$$

where:

$W_x$  is the economic value of technology;

$C_s$  is the flow of competitive benefits or differentials provided by the technology to the company in  $k$  number of years;

$i$  is the discount rate of benefit flows that takes into consideration risk and remuneration for pure capital investment.



The value-based approach has been applied by Ferrata (2007) to estimate the economic value of basic research through insurance related logic. Some aspects, such as the need for new knowledge arising from demand, the possibility of using basic research to solve laboratory problems that may crop up during the project, the benefits deriving from the sale of each unit of product following the development of the technology, must all be included in the analysis. The assessment of basic research can be represented in the following formula:

$$Y = \sum_{s=1}^k p_i (\Delta R_{i\% \sim m})_{r\% \sim t \sim m}$$

where:

- Y stands for the value of the basic research project with k as the alternative of use;
- k stands for the markets involved in the research field;
- $P_i$  stands for the probability of exceeding the limits whereby knowledge cannot be used on the market i;
- i is for the minimum net of incomes, estimated with reference to the market i;
- r% is for the discount rate;
- m stands for the estimate of the time necessary for the project to become operative on the market i;
- t stands for the the period of time in which the cash flows generated by the market i are expected to extend to i.

Another suitable approach for estimating the economic value of structural capital is the real options-based approach. This approach stems from the theory (Amram and Kulatilaka, 1999; Black and Scholes, 1972) stating that it is suitable for assessing applied research, since this method, defined by rationality, objectivity and neutrality, can enhance investments where there is a high level of uncertainty. The real options approach is set up as an option relating to an investment project.

The problems innate in this method refer to the definition of contractual conditions, which must be clarified on each occasion, and compliance of the investment with some specific features. The value of the investment is affected by contingent values, the uncertainty of the investment with the consequent need for further information; the possibility of making changes to the strategy once the process is underway; the flexibility of the investment, with the entrepreneur possibly choosing several alternative businesses. Since the investment follows several strategies, it has high-growth possibilities.

The assessment process includes several types of real options (Black and Scholes, 1972; Rooney, 2003): development of real options, connected with "platform investments" for the implementation of other projects; deferment real options, related to the opportunity of postponing any decision concerning further investments for a certain period of time; real flexibility options, typical of research projects where the final objectives can easily be changed. Real abandonment options give the operator the possibility of interrupting the project within a certain period of time at



advantageous conditions, in the hypothesis where it is no longer convenient in the context of future investment developments.

The existence of real options can be proved empirically, starting with a preference for investments in research with greater liquidity on the market if choosing between two investments with the same characteristics.

The approach proposed by Amran and Kulatilaka (1999) organizes the real options model into four phases: definition of the mathematical model in function of properties and sources of uncertainty; application of the assessment model of the option (Cox *et al.*, 1979; Black and Scholes, 1972); examination of the results achieved according to the data included in the model; possible redefinition of the investment following the re-elaboration of strategies or results that were not in line with management expectations.

From the definition of the various structural capital evaluation methods, it can be inferred that the limitations of the cost based approach and the value based approach mean that these methods are difficult to apply. It follows that the method based on real options seems the only way forward.

Federica Evangelista  
Rosa Lombardi  
Giuseppe Russo  
S.M. Riad Shams  
Exploring structural  
capital from the business  
administration  
perspective: a general  
framework on the existing  
literature

### 3. Methodological approach

The research approach of the present study is based on the qualitative method (Maylor and Blackmon, 2005; Myers, 2013). The research examines the topic of structural capital, emphasizing its role in the knowledge economy. Special attention is, therefore, paid to the following aspects:

- the concept of structural capital;
- management and enhancement features of structural capital;
- definition of the correct trade-off between accessibility and protection of company structural capital.

Data were acquired using the single-method approach, with a research protocol (Yin, 1994) that was needed/necessary for data processing.

For clarification, the research protocol involved the following steps:

1. the objective of the study was identified through a report summarizing the project;
2. the data collection procedures were defined and tasks assigned to each member of the three-person work group, which also researched secondary data.
3. guidelines were defined for the study report, highlighting the essential points of the project.

The research used secondary sources that were selected using the following search process:

- 25 scientific articles were selected on the basis of: “intellectual assets”, “knowledge management”, “structural capital” and “real options”;
- two databases were used and 20 scientific articles were found and consulted using the EBSCO database and word searches for “intellectual capital”; ten scientific articles consulted on Google Scholar by using the keyword “structural capital”;
- several websites, news articles and open access journals were also consulted.

#### 4. Findings and discussion

The research findings originated from an analysis of international literature on structural capital. Structural knowledge stimulates the accumulation of knowledge within and without the company that generated such knowledge; this, in turn, may inspire the creation of new technologies (Choen and Levinthal, 1989) and the formulation of new ideas.

Among the investigated aspects, it can be observed that the traditional methods of assessing social capital are not capable of evaluating investments in applied research, and therefore enhance opportunities. The high level of uncertainty in the results of an investment makes it difficult to estimate the value of technology (starting with necessary costs to create an equivalent technology of use) or to attribute a certain profitability or financial flow to it.

The real options approach meets this requirement, despite the difficulty of identifying its main elements (current price, applicable price, method of execution of the option) in the Option Pricing Model.

Another issue to consider is choosing a better way of managing structural capital (Lombardi *et al.*, 2014).

An increase in the importance of structural capital within the existing economic framework has encouraged the dynamic management of knowledge, which is no longer a static management model (Chesbrough, 2006) entrusted to the legal area or external specialists.

Therefore, the strategy needed to manage structural capital must be developed continuously according to the business phases of the company.

The dynamic management of knowledge should involve the clear identification of rights associated to its existing or potential capacity, achieved by defining which assets have a greater return on R&D investment.

Organizations can, therefore, develop innovation (Vrontis *et al.*, 2015) in different ways. They can create new knowledge on their own or, alternatively, agree to work in partnership with other organizations, under joint venture or development agreements (Palfrey, 2012). A third solution can be to acquire structural capital from a third party, such as another company, a university or a research institution.

When a company develops a technology, it expects its investments to be repaid through the profit that is generated by the innovation. A good level of protection provides the entrepreneur with an appropriate level of return.

A limited degree of protection, on the other hand, may lead to an increased fear of imitation. In this case, it makes sense to adopt management models based on the sharing of innovation: this is the case of licensing.

Due to the complexity of and increase in technologies, the shortening of the technology cycle, the globalization of technology and the increase in R&D costs and technology, partnerships have become significantly more frequent.

The sale of patents or companies buying and selling each others' licenses and technologies has become an acceptable way of doing business. This mutual interest in licensing agreements among companies can lead to excellent results for their business (Tidd *et al.*, 1997).

Sometimes, a company owns ideas and patents that are not used because they would not work in their own business, so they can transfer them (also through licensing agreements) to companies that are capable of exploiting their potential (Chesbrough, 2006).

Another proposed solution for managing internal capital, when the fear of imitation is high, is to provide knowledge in an open source format. These assets are shared, through special user licences among several operators, who can use them and easily make changes to them. The companies can compensate for any economic loss with the sale of complementary products.

Using the matrix adapted by Snell *et al.* (1999), it was possible to define a framework to manage the different forms of structural capital and maximize their contribution to the organization.

The following table (Table 2) lists the management models for structural capital, linked to the features of each form of structural capital, that were analyzed.

Tab. 2: Strategies associated to structural capital

Forms of structural capital	Management Strategy
Idiosyncratic structural capital	Collaboration between organizations (partnerships, joint ventures, alliances)
Ancillary structural capital	License agreements to transfer by marketing the structural capital
Core structural capital	License agreements to transfer by marketing the structural capital
Compulsory structural capital	- License agreement for the acquisition by marketing structural capital; - Providing the structural capital through an open source

Source: our elaboration

Idiosyncratic structural capital is not central to strategic value creation, since it can be developed by companies that work in collaboration with other organizations. The unique nature of this knowledge supports the establishment of long-term partnerships, engendering reciprocity and collaboration between the company and its partners. Investments should concentrate on connecting this knowledge with other forms of structural capital.

Ancillary structural capital has limited strategic value and uniqueness, so sometimes there is no strong incentive to maintain this kind of asset. Companies often prefer to contract license agreements and transfer the structural capital elsewhere.

Core structural capital is more likely to contribute to a company's core business. Consequently, companies have (financial and strategic) incentives to invest both in the internal development of these assets and in their

protection (as in commercial rights). In this way, companies can retain exclusive knowledge, which leads to a strategic advantage.

Compulsory structural capital is also important for creating value and driving strategic advantage. Since this kind of structural capital is not unique, two different strategies come into play, and they both depend on the possibilities of imitation and asset ownership. If the assets have a high probability of imitation and the company owns the assets, the company can release them in an open source format, while, if there is a lower probability of imitation and no structural capital ownership, the company must purchase its assets on the market.

The arrangements for managing structural capital are a consequence of its evaluation. The structural capital value chain (structural capital generation, evaluation and exploitation) suggests which management model (Laursen and Salter, 2006) is best adopted by the company.

The best way of handling these intangible assets requires managers to classify them according to their relevance (uniqueness and strategic value) to the company's core business (Tan *et al.*, 2007; Maditinos *et al.*, 2011; Kannan and Aulbur, 2004). A universal approach, however, may not be sufficient (Chesbrough, 2006).

## 5. Conclusions, limitations and perspectives

There is a significant amount of literature covering the topic of intellectual capital. Companies that exploit internal knowledge to create innovation and implement efficient and effective production processes secure their position of competitive advantage.

As a result, today's companies are rich, vital and competitive when they own a high level of intellectual capital.

Following this concept, company performance was investigated in its entirety by looking at the range of achieved results and considering various tangible and intangible elements.

This study has introduced an updated conception of structural capital in terms of its intangible components, with special reference to management and assessment.

With regards to the external management of company knowledge, structural capital management models were also investigated.

Starting from Snell *et al.*'s Matrix (Snell *et al.*, 1999), company structural capital was categorized on the basis of the strength of its strategic value and the uniqueness of its assets, and classified into idiosyncratic structural capital, core structural capital, ancillary structural capital and compulsory structural capital.

For each of these, companies can implement a structural capital management strategy to ensure that strategic advantage is achieved to create long-term value.

Our findings have some implications. Specifically, the taxonomy identified for structural capital means that managers, after defining the kind of asset they are referring to, can specify the best way for it to be managed in order to achieve a strategic advantage.

Moreover, structural capital assessment and management is becoming a basic feature in fully appreciating the organization's creation of value.

This paper highlights some limitations. These include its theoretical form and the fact that the analysis that was carried out is an updated interpretation of concepts found in literature through the previously illustrated research method.

Therefore, the aim of future research is to summarize the literature on the topic of structural capital with the objective of providing further qualitative analysis.

Federica Evangelista  
Rosa Lombardi  
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S.M. Riad Shams  
Exploring structural  
capital from the business  
administration  
perspective: a general  
framework on the existing  
literature

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Exploring structural  
capital from the business  
administration  
perspective: a general  
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# New venture creation in academia: preconditions and drivers for the emergence of academic spin-offs

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## Abstract

**Purpose of the paper:** This study aims to explore determinants for the emergence of academic spin-offs (ASOs). We analyzed individual, institutional and infrastructural factors that lead to the emergence of ASOs and their influence on the business model choice of firms in their start-up phase.

**Methodology:** The analysis is based on quantitative and qualitative methods; the field of research is the life sciences faculty of the University of Siena.

**Findings:** Consultancy by researchers is a positive predictor of the propensity to create a business. Quality and quantity of scientific production are associated positively but only up to a certain threshold, beyond which academics have less inclination for entrepreneurship. University department size plays a decisive role: scarcity of resources may limit the emergence and growth of ASOs. Science parks and university-industry liaison structures play a crucial role in the emergence and survival of new businesses. The resources, competence and motivation of the founders are the main determinants of the choice of business model of ASOs during the start-up phase.

**Research limitations:** The analysis regarded one medium-sized university and a single (albeit large) scientific field, i.e. life sciences.

**Managerial implications:** The results can help managers assess *ex ante* which university careers potentially lead to the emergence of ASOs.

**Originality of the paper:** Few prior studies have considered qualitative and quantitative empirical evidence on factors influencing the emergence of ASOs and the choice of business model during the start-up phase.

**Key words:** spin-off; academic entrepreneurship; entrepreneurial orientation; technology transfer; university-industry links; business model

## 1. Introduction

Scientific knowledge is a key factor for industrial development and technological innovation. The application of theoretical knowledge to technical solutions through technology transfer is a major source of competitive advantage for many companies. In this context, universities and research centers play a vital role through traditional research and training and the exploitation of research results that can lead to economic development (Vincett, 2010) in a regional context (Zanni, 1995). In recent years, the range of activities and channels available to universities to implement technology transfer has gradually expanded: *producing highly qualified graduates,*

*publishing academic results, grantsmanship, consulting, industry training courses, contract research, patenting and licensing, technology parks* (Philpott *et al.*, 2011, p. 162). This has prompted many scholars to study the new *entrepreneurial mission* of universities (Lazzeroni and Piccaluga, 2003) and to define an *entrepreneurial paradigm* according to which universities work “*with the objective of improving regional or national economic performance as well as the university’s financial advantage and that of its faculty*” (Etzkowitz *et al.*, 2000, p. 313). The creation of academic spin-offs (ASOs) is an outstanding way to activate technology transfer (Lazzeri and Piccaluga, 2014).

Many scholars investigating the phenomenon of academic entrepreneurship have preferred the institutional point of view, focusing in particular on university characteristics (cf Rasmussen *et al.*, 2014) and the organizational models implemented by structures devoted to technology transfer. In this case the aim is to understand which contextual factors facilitate the emergence and growth of ASOs (e.g. Di Gregorio and Shane, 2003; Rasmussen and Borch, 2010; Algieri *et al.*, 2013). Other studies that rely on a *resource-based* approach (Barney, 1991) have explored the resources and competence of founders that give emerging ASOs a competitive advantage (e.g. O’Shea *et al.*, 2005). In new businesses, particularly in the scientific sector, competitive advantage is based on the skills and knowledge of the founders (Cooper and Bruno, 1977). Resources allowing certain researchers to develop new business activities include cognitive capacity, organizational and relational resources (Landry *et al.*, 2006), risk propensity, potential loss of prestige in academic circles and research team cohesion (Compagno *et al.*, 2005).

There does not seem to be any generally accepted definition of ASO in the literature (Pirnay *et al.*, 2003) or taxonomy of the types with which this form of entrepreneurial activity may arise (Fryges and Wright, 2014). Some authors focus on the source of innovation, others on the relationship between researchers and their working structure, others on the role of lenders promoting entrepreneurial start-up. A definition that attempts to grant the various contributions used in this paper is that of Pirnay *et al.* (2003) who defined university spin-offs as “*new firms created to exploit commercially some knowledge, technology or research results developed within a university*” (p. 356). In their view, an ASO must essentially be a profitable new business that is independent from the university that generated it.

As already pointed out, a number of studies have investigated the determinants of ASO emergence, although little is available in the literature on these different determinants jointly. Research has generally only focused on individual (e.g. Landry *et al.*, 2006; Abramo *et al.*, 2012), institutional (e.g. Algieri *et al.*, 2013; Ramacciotti and Rizzo, 2014), contextual or infrastructural determinants (e.g. Fini *et al.*, 2011; Link and Scott, 2005; Corsi and Prencipe, 2015; Rizzo, 2015). Studies that analyze how these determinants may influence the ASO business model structure during the start-up phase are also rare (Lehoux *et al.*, 2014; Stanckiewicz’s, 1994).

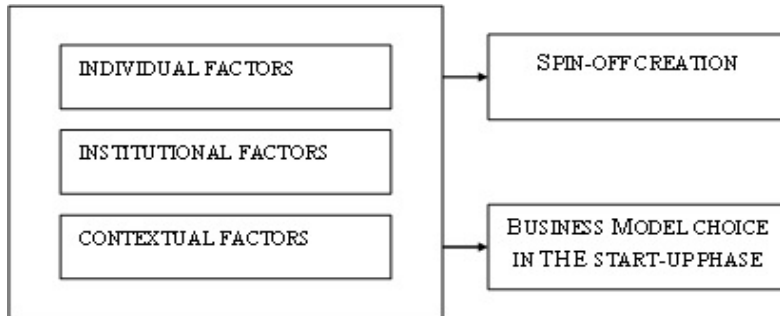
The aim of the paper is to provide insights that help bridge this gap, investigating into the factors that promote/hinder the emergence of ASOs. In particular, we aim to answer the following research questions:

- 1) Which factors influence the propensity to create ASOs and how?
- 2) Which factors influence the choice of ASO business models in the start-up phase and in what way?

Figure 1 illustrates the used research framework.

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

*Fig.1: Research framework: factors influencing ASO emergence and business model choice in the start-up phase*



Source: our elaboration

The framework refers to three groups of factors:

- *individual factors*: the scientific and technological competences of the team founder, managerial and marketing skills complementary to these competences and propensity of researchers for academic technology transfer (e.g. research, patenting, counseling);
- *institutional factors*: support structures (e.g. liaison offices), university size and policy, department size;
- *contextual and infrastructural factors*: incubators and science parks favoring development or reducing operating costs during the start-up (Piccaluga, 2000), industrial characteristics of the ASO sector (e.g. technological clusters or industrial districts).

Section 2 of this paper reviews the literature on the emergence of ASOs, showing the relationship of the present study with existing research. Section 3 outlines the research method. The results of the study are presented and discussed in Section 4, concluding with suggestions for future research in Section 5.

## 2. Theoretical background

The study of ASOs is part of the broader stream of literature on technology transfer. Until the first half of the 2000s, such studies focused mainly on the role of institutions, especially universities and technology transfer offices (TTOs) (e.g. Lamboy, 2004; Clarysse *et al.*, 2011; Feldman *et al.*, 2002; Siegel *et al.*, 2003). In this case the formation of relationships

with industry was linked to the context in which they were established: type of organization, culture, research environment, etc. Subsequent research has however shown that engagement with industry also depends heavily on the capacity and skill of the actors, whether they are individual researchers or entire organizations (Giuliani *et al.*, 2010; Rasmussen *et al.*, 2011). Therefore, the latest studies seek to integrate the two approaches, using individual and institutional factors to explain the propensity and intensity of links between universities and industry.

For example, Landry *et al.* (2007) focus on patenting and spin-off emergence in the field of life sciences and engineering, suggesting that such activities are influenced by five groups of factors: “*financial and partnership assets*” (internal financing from the university, funding from the private sector and partnerships); “*attributes of knowledge assets*” (related to scientific production and its innovativeness); “*network assets*” (the strength of links between the researcher and managers or professionals of other organizations); “*organizational assets*” (university size, research unit size, training time); “*personal assets*” (experience and academic status of the researcher). The results of Landry *et al.* (2007) show that the novelty of the conducted research and the size of the laboratories are the only variables that significantly explain patenting and ASO emergence in the two disciplines considered. D’Este and Patel (2007) propose a model to verify the influence of: characteristics of individual researchers (certain individual determinants are predictors of subsequent commercial activities conducted by a researcher, in particular the size of the business set up, as well as the researcher’s age and academic status); department characteristics (university departments and especially resources available for research and the quality of research) may influence the propensity of its researchers to transfer technology; university characteristics; the variety of interactions between university and industry (universities have different commercial orientations that can be measured in terms of existence, age and resources of TTOs, resources from the industry). The results of the study by D’Este and Patel (2007) show that university researchers are more often involved in certain channels of interaction with industry (consultancy, research contracts, training, joint research) than in others (patenting and ASO emergence). In particular, the authors show that individual characteristics are more decisive than the characteristics of university departments in explaining the propensity to entertain relations with industry. D’Este and Perkmann (2011) also show that academics driven by learning-related motivation are more often involved in joint research and research contracts, whereas motives related to the possibility of commercialization of research results lead to the exploitation of channels such as patenting, consulting and ASO.

A problematic aspect of ASOs is the relationship between entrepreneurship and research (Abramo *et al.*, 2012). Studies that have examined this relationship at an institutional level have shown a positive link between quality of scientific production of a faculty and the number of created ASOs (O’Shea *et al.*, 2008). At an individual level, however, the relationship remains controversial (Giuliani *et al.*, 2010) and there have

been conflicting results in relation to both the quantity and the quality of research carried out by individual academics. The question in this case is whether the effect of the reputation of academic research is positive, i.e. is an indicator of the skills and expertise of individual researchers (inviting the industry to establish relations with them), or negative, in the sense that high quality academic research means less time dedicated to commercial activities (Landry *et al.*, 2007; Haeussler and Colyvas, 2011; Lowe and Gonzales-Brambila, 2007; Buenstorf, 2009).

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

Among the contextual and infrastructural factors influencing the emergence of ASOs, many studies have focused on science parks and incubators. A “science park” can be defined as “a property-based initiative which i) has formal operational links with centers of knowledge creation, such as universities and (public and/or private) research centers, ii) is designed to encourage the formation and growth of innovative (generally science-based) businesses, and iii) has a management function which is actively engaged in the transfer of technology and business skills to customer organizations” (Colombo and Delmastro, 2002, p. 1107). Science parks generally feature research laboratories and an incubator. The latter is defined as “a property-based venture which provides entrepreneurs and start-ups with physical facilities and technical and business services” (OECD, 1997; Colombo and Delmastro, 2002, p. 1105). Especially in technology-intensive sectors, science parks and incubators not only promote the development and reduce the cost of managing the start-up phase, but may also play a role in the mentoring and integration of innovative processes generated by the new business, thus ensuring continuous transfer of knowledge and technology between academia and industry.

### 3. Methodology

The empirical analysis that follows is based on the use of quantitative and qualitative methodologies. We chose to use the case method in addition to an analysis of secondary sources (Stokes, 2000), because we believe that it can promote understanding of complex subjects (Gilmore and Carson, 1996) such as emergence of ASOs, while further validating the results of quantitative analysis. Quantitative analysis will focus on the relationship between individual and institutional factors and the propensity of individual researchers to set up businesses. Qualitative analysis will be used to investigate individual, institutional and contextual factors that influence the emergence of ASOs and the choice of business model in the start-up phase of new businesses.

In the field of life sciences (Pavitt, 1984), the scientific and technological expertise of the founding members is crucial for ASO emergence (Visintin and Pittino, 2014). The University of Siena has a good number of ASOs in the national context (Bax *et al.*, 2014, p. 98) and, above all, it is a center of excellence in Italy for biotechnology and pharmaceutical research and the respective technology transfer (Ramella and Trigilia, 2010, p. 56). It is also part of one of the first Italian life science technology clusters (Pucci and Zanni, 2012). The cluster includes a rich population of firms (including

multinational pharmaceutical companies) that drives technology transfer between academia and industry (consultancy, research contracts, joint PhDs with industry, etc.).

### 3.1 Quantitative methodology

The study was based on a dataset, collected by the authors between 2011 and 2012, containing the career information, scientific productivity, number of patents filed and consulting activities of all academics at the University of Siena in the field of life sciences. The data sources for each section of the dataset were: *scientific productivity*: ISI-“Web of Science” bibliographic database; *career-related variables*: researchers’ curricula vitae, available on their Departmental web pages; patents: University of Siena’s Liaison Office patent database; *consultancy work and research agreements with industry*: data provided by the university’s Liaison Office.

The measures used in this study were those generally used in the literature with reference to individual and institutional determinants of researcher engagement with industry.

The dependent variable was the Spin-off, recorded as a dichotomous variable with a value of “1” for founders of new academic ventures in the 1991-2010 period; “0” otherwise.

The independent variables were:

“Demographic” and “Sectorial” effects

- *Gender*: as a dichotomous variable, with a value of “1” for males and “0” for females
- *Age*: (in years) of each academic researcher in 2010
- *MED*: as a dichotomous variable, with a value of “1” for researchers in the medical sector and “0” otherwise.

“Education” effects

- *Visiting*: dummy variable, with a value of “1” for academics who were visiting lecturers at universities or research centers abroad during their postgraduate training or are currently visiting professors.
- *Spec./PhD*: as a dichotomous variable measuring academic qualifications, with a value of “1” for doctorate or specialist qualification (the latter in medicine) and “0” otherwise.

“Status” effects

- *Role*: dummy variable, with a value of “1” for full professor or associate professor and “0” otherwise.
- *Instit. Position*: dummy variable, with a value of “1” for institutional positions in the department or university between 1991 and 2010; “0” otherwise.

“Complementarity” effects

- *Patenting*: dummy variable, with a value of “1” for those who filed a patent in the years between 1991 and 2010; “0” otherwise.
- *Consultancies (no.)*: number of research agreements or consultancies in which researcher was involved in the 1991-2010 period.
- *Consultancies (amount)*: average value of consultancies (divided by 1000);

#### *“Reputation” effects*

- *No. publications*: total number of researcher’s publications in the 1991-2010 period.
- *Average IF*: average impact factor of researcher’s publications.

#### *“Institutional” effects*

- *Dept. size*: number of researchers affiliated with the researcher’s department.

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

### 3.2 Qualitative methodology

To answer the questions we posed, we analyzed the case (Eisenhardt, 1989; Yin, 2003) of an academic start-up of the University of Siena. We used the theoretical framework for the analysis of business models developed by Pucci *et al.* (2013) and Casprini *et al.* (2014). The conceptual model proposed by these authors envisages a business model composed of three major systemic components: New Product Development System, Market Management System and Organizational Process System, derived from the intersection of three different blocks of activities: strategy, organization and business skills (Casprini *et al.*, 2014, p. 4). This framework allows us to analyse the characteristics of the business model at its start-up and highlight the preconditions and drivers that led to the setting up of the business. For a discussion on the concept of business model, see the literature review of Zott *et al.* (2011).

We conducted interviews with figures in several key business roles to cross-check the data collected (Stake, 1995), but above all to understand the interactions among the systemic components of the firm’s business model. In particular, we interviewed the Director General and the heads of the administrative offices. After a first round of interviews in 2013, the research process was divided into two updated interviews that took place in 2014. The collected information, supplemented with data from the administrative offices of the company and its financial statements, was then overlaid and analyzed to answer our research questions.

## 4. Results

### 4.1 Results of the quantitative analysis

Table 1 shows the descriptive statistics of all variables and their correlation coefficients.

*Tab. 1: Descriptive statistics and correlations*

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
[1] Spin-off	1,000													
[2] Gender	0,007	1,000												
[3] Age	0,027	0,249	1,000											
[4] MED	-0,158	0,206	0,125	1,000										
[5] Visiting	-0,042	-0,029	-0,003	-0,163	1,000									
[6] Spec./PhD	-0,034	0,059	-0,019	0,219	0,350	1,000								
[7] Role	0,068	0,300	0,599	0,026	0,110	0,061	1,000							
[8] Instit. Position	0,272	0,188	0,259	0,047	0,114	0,067	0,293	1,000						
[9] Patenting	0,210	0,039	0,003	-0,259	0,147	-0,084	0,186	0,114	1,000					
[10] Consultancies (No.)	0,441	0,204	0,186	0,053	0,106	0,035	0,288	0,340	0,182	1,000				
[11] Consult. (amount)	0,060	-0,064	-0,041	-0,103	0,176	0,025	0,137	-0,008	0,198	0,061	1,000			
[12] N° Publications*	0,089	0,151	0,140	0,178	0,213	0,109	0,329	0,326	0,206	0,283	0,174	1,000		
[13] Average IF	0,122	-0,139	-0,191	-0,263	0,104	-0,094	-0,043	-0,013	0,211	0,070	0,197	0,087	1,000	
[14] Dept. Size	0,175	-0,047	0,147	0,001	-0,053	-0,073	-0,006	0,020	0,243	0,050	0,101	0,010	0,084	1,000
Mean	0,037	0,618	53,977	0,581	0,279	0,542	0,555	0,110	0,203	2,841	4,394	41,043	3,108	25,233
Std. Dev.	0,188	0,487	8,840	0,494	0,449	0,499	0,498	0,313	0,403	7,114	18,866	45,825	1,418	6,535
Min	0	0	33	0	0	0	0	0	0	0	0	5	0,51	11
Max	1	1	70	1	1	1	1	1	1	53	180	546	9,97	33

N = 301. Correlation coefficients with an absolute value greater than 0.114 are statistically significant at 95%. \* Total number of ISI Publications: 12354.

The analysis of the correlation matrix did not reveal any collinearity issues among variables, as confirmed by calculating the VIF (variance inflation factor) scores and tolerance (Table 2).



Tab. 2: VIF scores and Tolerance

Variables	VIF	Sqrt	VIF	Tolerance
Gender		1,20	1,10	0,832
Age		1,78	1,34	0,561
MED		1,44	1,20	0,696
Visiting		1,33	1,15	0,752
Spec./PhD		1,29	1,13	0,777
Role		1,94	1,39	0,515
Instit. Position		1,32	1,32	0,759
Patenting		1,31	1,14	0,764
Consultancies (No.)		1,25	1,12	0,799
Consult. (amount)		1,14	1,07	0,876
N° Publications*		1,43	1,20	0,698
Average IF		1,19	1,09	0,838
Dept. Size		1,13	1,06	0,887

N = 301; Mean VIF = 1,37; Condition number = 35,060

Source: our elaboration

A logistic regression was used to predict the probability of ASOs being created. Table 3 shows the results.

Tab. 3: Results of logistic regression for spin-off emergence

	Model A	Model B	Model C	Model D	Model E	Model F
<i>"Demographic" and "Sectoral" effects</i>						
Gender	0,350 (0,633)	0,355 (0,626)	-0,350 (0,744)	-1,322 (1,250)	-1,360 (1,191)	-1,518 (1,201)
Age	0,026 (0,048)	0,032 (0,051)	-0,028 (0,066)	0,001 (0,054)	0,019 (0,059)	0,038 (0,074)
MED	-2,026* (0,816)	-2,333* (0,824)	-1,867* (0,842)	-3,895* (1,573)	-4,495* (1,910)	-4,105* (1,664)
<i>"Education" effects</i>						
Visiting		-1,093 (0,879)	-1,313 (0,925)	-1,910 (1,267)	-2,336^ (1,245)	-1,891 (1,161)
Spec./PhD		0,512 (0,673)	-0,079 (0,654)	0,217 (0,888)	0,364 (1,000)	0,445 (1,004)
<i>"Status" effects</i>						
Role			0,204 (0,990)	-1,054 (1,100)	-1,381 (1,085)	-1,624 (1,273)
Instit. Position			2,903** (0,821)	2,440* (1,056)	2,259^ (1,196)	2,560^ (1,350)
<i>"Complementarity" effects</i>						
Patenting				1,030 (1,115)	0,886 (1,142)	-0,909 (1,745)
Consultancies (No.)				0,180** (0,052)	0,181** (0,055)	0,204** (0,072)
Consult. (amount)				0,005 (0,015)	0,004 (0,015)	0,005 (0,019)
<i>"Reputation" effects</i>						
N° Publications					0,007^ (0,004)	0,010* (0,005)
Average IF					0,280^ (0,153)	0,398* (0,160)
<i>"Institutional" effects</i>						
Dept. Size						0,280** (0,101)
Constant	-4,141 (2,568)	-4,392 (2,799)	-1,454 (3,073)	-3,165 (2,870)	-5,062 (3,312)	-14,160* (6,024)
Pseudo R <sup>2</sup>	0,091	0,112	0,250	0,544	0,556	0,619
Wald χ <sup>2</sup>	8,05*	12,45*	29,95**	39,36**	44,36**	45,58**

^ p < 0,10; \* p < 0,05; \*\* p < 0,01; N = 301; Robust standard error in parenthesis

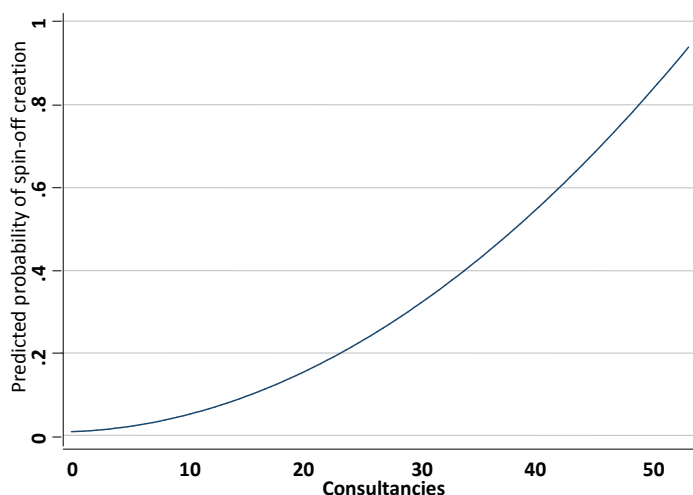
Source: our elaboration

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

The different groups of effects were gradually added to the six models. The regression results of model F (the model that best fits our data) indicate that the probability of an ASO emergence is a positive function of the number of consultancies ( $b = 0.204$ ), the number of publications ( $b = 0.010$ ), the average impact factor ( $b = 0.398$ ) and department size ( $b = 0.280$ ). The coefficient of institutional position is positive ( $b = 2.560$ ), albeit borderline significant. Among demographic and sectorial effects, medical discipline has a negative effect on the probability of creating a spin-off ( $b = -4.105$ ).

Figure 2 shows the predicted probability of an ASO emergence as a function of the number of consultancies.

*Fig. 2: Predicted probability of spin-off emergence as a function of number of consultancies*



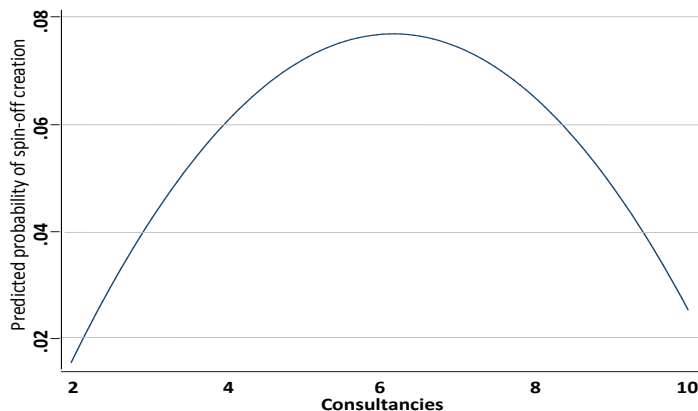
Source: our elaboration

Figure 2 shows that the number of consultants is a key determinant for the emergence of ASOs. The results did not, however, show a positive association between the average value of consultancies and the probability of creating an entrepreneurial venture. So it seems that the frequency of interaction with industry is a precondition for emergence of ASOs, rather than the extent of this interaction. A greater number of consultations may therefore signal greater understanding of the market on the part of the involved researchers, and it may therefore be a major driver of new academic venture creation.

Figures 3 and 4 show the predicted probabilities of an ASO emergence as a function of the researcher's average impact factor and the total number of the researcher's publications, respectively.

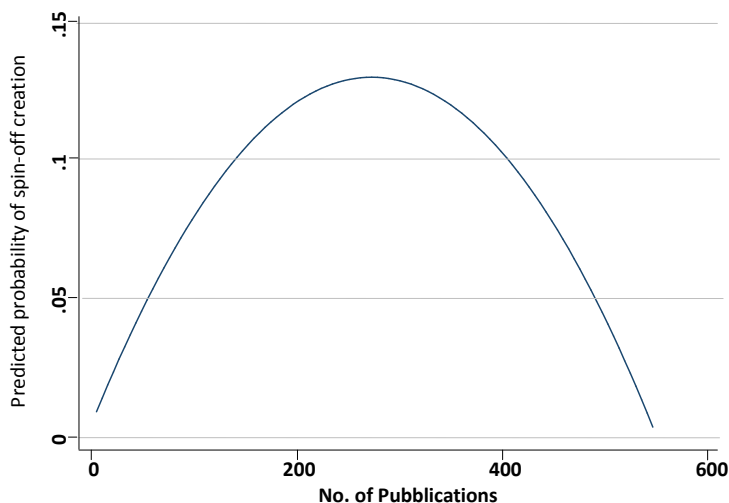
Fig. 3: Predicted probability of spin-off emergence as a function of scientific quality

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs



Source: our elaboration

Fig. 4: Predicted probability of spin-off emergence as a function of scientific production

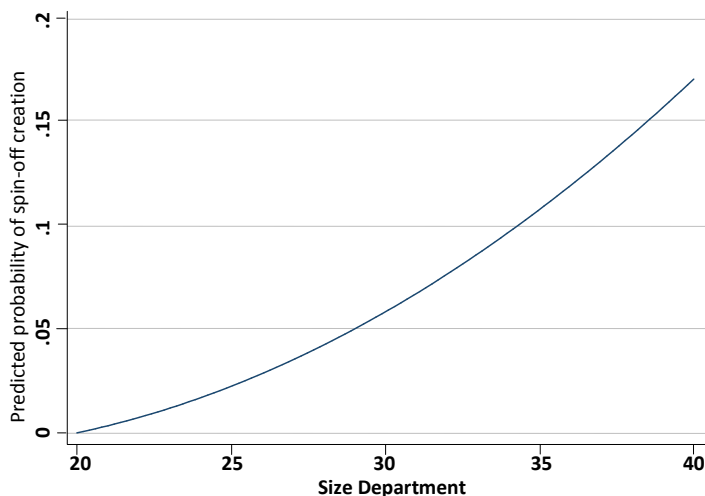


Source: our elaboration

Both figures show an inverted U-shaped relationship between the quality/quantity of publications and the probability of an ASO emergence. Below a certain threshold, the quantity and quality of scientific productivity are a positive factor for the propensity to set up a business, since scientific reputation is based on the production of knowledge and skills that can easily be transferred to commercial ventures. Above this threshold, there is a substitution effect between the two channels of technology transfer, where academics prefer to do research rather than engage in entrepreneurial activity.

Finally, Figure 5 shows the predicted probabilities of an ASO emergence as a function of department size.

*Fig. 5: Predicted probability of spin-off emergence as a function of department size*



Source: our elaboration

Among institutional factors, department size seems to be a positive driver of the emergence of new ASOs. It can in fact be considered a proxy of the resources that are available to the department: it is possible that the greater the number of components of the organizational unit, the higher the probability that a research group within it can specialize in activities that are closer to the industry world.

#### *4.2 Results of the qualitative analysis*

In discussing the case study, we refer to the firm as “Alpha”. Alpha Company is a example of success in the world of academic start-ups. Founded in 2009 and incubated at the bio-incubator TLS<sup>1</sup>, Alpha is a service company that has achieved a turnover of almost three million Euros with 11 employees in just over five years. Although it did not follow the protocol and procedures for the establishment of ASOs, Alpha was founded by three academics: a professor and two researchers. It can therefore be considered an ASO. It focuses on the organization and management of basic, clinical and applied research protocols, including clinical trials, evaluation of therapies and preventive measures such as vaccines. The main reason the business was started was the founders’ need to overcome some of the constraints on counseling that they had previously conducted at the university. Specifically, the growing demand

<sup>1</sup> The Tuscan Life Sciences (TLS) Foundation is a non-profit organization that has been supporting research in the life sciences and technology transfer processes from basic research to industrial application ([www.toscanalifesciences.org](http://www.toscanalifesciences.org)) since 2005.

of the market for clinical tests on class 3 pathogens could not be met by the research team due to the lack of appropriately equipped laboratories at the university. The recognized skills and scientific expertise of the team, gained over years of basic and applied research, could not be exploited due to lack of resources and the necessary assets to tackle all phases of clinical trials in increasing demand. The company was founded as a single-product business specializing in clinical tests for the licensing of vaccines, but grew through diversification. In 2013, Alpha obtained the ISO-17025 certification and entered the field of agro-food certification. Diversification arose from the possibility of replicating the screening of drugs used in the main business on other products, such as cosmetics and food. In 2013, Alpha also strengthened its core business by buying into a new service company dealing with calibration, maintenance and regulation of laboratory equipment. The following year it floated a new research company, entirely owned by Alpha, which provides new technological solutions for the parent company.

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

In the theoretical framework proposed by Casprini *et al.* (2014), the business model of Alpha in its start-up phase was “*Organizational Process-Oriented*”. This model was created by the intersection of “*organization*” and “*business skills*” components. Indeed, Alpha combines the efficiency maximization of the processes behind its services (reduction of transaction costs, complementarity of resources, standardization) with skill development, especially relational skills. The latter is one of its fundamental drivers of success. The entrepreneurial team does indeed count on a wide network of relationships, both operational and learning-oriented, gained from conducting research and consultancy at the university. This has also enabled the company to go into business with some of the big players of the pharmaceutical industry that provided access to international markets of strategic importance.

The “*strategic*” component of the business model was initially less developed. This is probably due to its lack of specific skills in the management context during the start-up phase. The multiple-product model implemented by the company in recent years and the entry of professionals with a background in business have progressively transformed the business model into one of “*Market-Oriented Management*” (Casprini *et al.*, 2014). The business model of Alpha is now more focused on the management of various areas of activity, improving distribution channel efficiency and the management of served markets (Pucci *et al.*, 2013).

## 5. Discussion and implications

The aim of this paper was to analyze the three main factors that promote/hinder the emergence of ASOs and to understand how these factors may influence the choice of business model of companies in their start-up phase. Empirical studies enabled us to highlight some typical aspects of the emergence of ASOs.

With regard to individual factors, the results show that the skills and competence of the founders are a determining factor not only of the propensity to create ASOs, but also of the choice of business model in the

start-up phase. Firstly, we found that the scientific and technological expertise of the proponents is important. The quantity and quality of research are an expression of their technical skills. However, the attainment of certain thresholds of scientific excellence can divert academics from commercial activities. Secondly, the limited business skills of teams of distinctive scientific origin may make them unaware of target markets (particularly in terms of commercial potential), while inadequate marketing and management skills may explain the discontinuous economic performance and limited turnover that are typical of many ASOs. Scientific and technological skills alone are not enough to ensure a sustainable competitive advantage in the long run. Entrepreneurs must also have the business and management skills necessary to effectively perform the three main entrepreneurial functions (strategic, political and organizational) (Fazzi, 1982). The development of relational skills can also significantly improve the performance of ASOs (cf Walter *et al.*, 2006; Soetanto and Van Geenhuizen, 2015). In technology-intensive sectors in particular, a lack of strategic and managerial skills in the start-up phase can favor a choice of business models that is more oriented towards the innovation and development of new products, or focused on organizational efficiency (Pucci *et al.*, 2013; Casprini *et al.*, 2014). Among individual factors, the quantitative analysis also showed that previous working experience as consultants in universities trained the founders in interacting with industry and acquainted them with the market for future ASOs. Finally, from a teleological viewpoint (Vallini, 1990), the ultimate objective of creating an ASO cannot simply be to enhance the results of scientific research from a commercial point of view. In countries facing an economic crisis (like Italy), public universities have fewer and fewer resources. Academic start-ups may therefore offer an alternative to researchers who are not contemplating an academic career or unfunded university research.

With regard to institutional factors, department size emerged as a positive predictor of ASO emergence. This is linked with our previous observations on the lack of resources: larger departments and research groups can presumably count on a greater allocation of resources that can be invested in the development of commercial activities. The existence of support structures (e.g. university liaison offices) may promote the start-up of ASOs (provided it has the necessary resources), but it is not sufficient to ensure company growth, which must rely on its own entrepreneurial resources or external support (e.g. business angels, venture capitalists). Incubation incentives (university supplied tools and machinery) can promote early development, thus reducing operating costs, but they cannot be considered permanent resources for the subsequent growth of the business. In terms of public policy, creating ASOs can also be a way to overcome the problem of shortage of institutional resources. This is true of problems related to the ownership of the results of innovation (patents): innovations produced in universities are licensed to third parties because universities do not have the resources for their commercial exploitation.

Finally, with reference to contextual factors, the literature often observes that insufficient own or third-party capital (in Italy the figure

of the venture capitalist is relatively uncommon) makes it impossible to support company growth. However, the case study showed that this can be overcome through other contextual factors. An ASO emerging in a vital technological cluster can count on social and relational capital that in certain circumstances may limit the need for financial capital. This may be true of joint ventures between researchers and industry, which facilitate practical training and new business skills; or of clusters including medium and large enterprises with a high degree of internationalization (e.g. multinationals) that can act as a bridge for access to new markets; or of cluster support structures that not only provide specialized services but also mentor new a business in its early stages.

**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
emergence of academic  
spin-offs

## 6. Conclusions, limitations and further research

The analysis that we have conducted shows that the propensity to create an ASO can be influenced not only by individual factors, but also by institutional and contextual factors. These same factors can also determine the choice of the business model of the new firm in its start-up phase. The way in which these factors act is complex. On the one hand, a quantitative analysis of some individual variables (for example the quantity and quality of scientific publications) can be carried out and it may be a useful tool to evaluate the entrepreneurial propensity of the faculty of a University's researchers. On the other hand, the analysis of contextual and institutional factors is highly dependent on the understanding of the meso- and macro-economic dynamics that characterize the environment in which the University is located. Henceforth, in this case a qualitative analysis seems to be most effective to understand the influence of the context and institutions on new ASOs' emergence.

The results of the study show that these analyses can help the public decision-maker and, above all, the same TTOs to understand where to channel resources in order to maximize the number of new businesses created.

The study highlights some limitations. The analysis focused on a single university. An analysis of other universities (also of different sizes) may reveal links between different variables. Especially at an institutional level, department or research group size, the resources available to them and specific academic policies could provide further insights into the research questions. An international comparative analysis may reveal differences in drivers and prerequisites for the emergence of ASOs in different countries. Finally, extending the study to a wider domain (e.g. engineering, social sciences, etc.) could further validate the results.

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**Tommaso Pucci**  
New venture creation in  
academia: preconditions  
and drivers for the  
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# Business model innovation: a typology

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## Abstract

**Purpose of the paper:** The aim of the paper is to provide a typology of business model innovation (BMI) and to clarify its link with strategy. In particular, it focuses on the servitization strategy and shows multiple business model configurations that entrepreneurs may choose from when changing their strategy.

**Methodology:** After a literature review conducted through ISI Web of Science database on 14 ABS grade four and grade three leading journals, published between 2000 and 2014, a new theoretical framework is presented. Baden-Fuller's and Haefliger's (2013) business model (BM) dimensions were selected in order to build the theoretical framework and Neeley's (2008) identified servitization strategies were used in order to clarify the link between business model innovation and strategy.

**Findings:** The literature reviewed shows that extant research has mainly focused on the capabilities and processes behind BMI, but has not provided a typology for BMI. The typology proposed consists of 16 business model configurations that may serve for both academics and practitioners in configuring a business model following a change in the firm's strategy. Considering the servitization strategy, it is suggested that different servitization strategies require from entrepreneurs to choose between alternative business model configurations.

**Research limitations:** The literature reviewed is limited to top international journals and the paper provides only ad hoc created examples in order to show how different servitization strategies require alternative business model configurations.

**Research and managerial implications:** The theoretical framework proposed might be used as a means of analysing alternative business model configurations by entrepreneurs, and as a means of comparing alternative business model configurations by academics.

**Originality of the paper:** The paper complements existing literature reviews on business model, focusing on BMI. Moreover, it provides a first attempt to link the servitization concept to the business model theme, hence contributing to bridging marketing and strategic management literatures.

**Key words:** business model innovation; strategy; configuration; entrepreneurship

## 1. Introduction

Business model and entrepreneurship are two interlinked fields of research. If on the one hand business model literature has benefited from contributions related to research on entrepreneurship (Amit and Zott, 2001; Doganova and Eyquem-Renault, 2009), entrepreneurship literature has used the business model concept in order to better understand how opportunities are exploited (George and Bock, 2011).

In their seminal paper, Shane and Venkataraman (2000) define entrepreneurship as “*the examination of how, by whom and with what effects opportunities to create future goods or services are discovered, evaluated and exploited* (Venkataraman, 1997). Consequently, the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them” (p. 218). Hence, a business model broadly described, is the way a company creates and captures value (Zott *et al.*, 2011). According to Amit and Zott (2001), the business model in fact “*depicts the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities*” (p. 494-495).

Moving from a Schumpeterian innovation theory of economic development, this paper focuses on business model innovation defined as “*a fundamental rethink of the firm’s value proposition in the context of new opportunities*” (Bock *et al.*, 2012, p. 290). In line with the five sources of value creation pointed out by Schumpeter, namely, the introduction of new goods or new production methods, the creation of new markets, the discovery of new supply sources and the reorganization of industries, business model innovation may be seen as a source of value creation (Amit and Zott, 2001) capable of disrupting existing industry structures. An example is Starbucks that has revolutionized the coffee business (Gambardella, 2014).

As stressed by extant research, understanding business model innovation is important in that it is considered as the new driver of competitive advantage (Casadesus-Masanell and Ricart, 2011; Casprini *et al.*, 2014; Chesbrough, 2010; Chesbrough *et al.*, 2011; Gambardella, 2014; Pucci *et al.*, 2013). Nonetheless, innovating a business model is not a simple task and requires a shift in the strategic thinking of the company (Amit and Zott, 2001). It is not surprising that both academic and practitioners efforts are tending towards understanding how companies may innovate their business models. However, despite the flourishing literature on business model innovation, the understanding of what a business model innovation is and how strategy impacts it, is still at its infancy. In order to bridge business model innovation and strategy, a conceptual framework that shows the different business model combinations that an entrepreneur may choose in order to exploit opportunities is introduced in this paper. The paper is structured as follows. First, a literature review on business model innovation is provided. Then, moving from the business model dimensions developed by Baden-Fuller and Haefliger (2013), a business model innovation typology is proposed. Third, in order to clarify the link between strategy and business model innovation, it is shown how strategy influences business model innovation, by considering the multiple facets of the so called servitization strategy (Neely, 2008; Vandermerwe and Rada, 1988), i.e. addition of service(s) to product(s) by a manufacturing company. The framework sheds light on how entrepreneurs can choose between alternative business model configurations while deciding to implement a servitization strategy and while exploiting new opportunities.

Business model is a concept in fashion and widely used in the management literature and its roots date back to Peter Drucker who defined it as the answer to the questions: who is your customer, what does the customer value, and how do you deliver value at an appropriate cost? (Casadesus-Masanell and Ricart, 2011; Magretta, 2002). Business model has received increasing attention by both practitioners and scholars, especially since the advent of Internet. Extant literature reviews on the theme have identified the macro-areas where business model concept has been used (Zott *et al.*, 2011) and the broad themes that usually emerge within strategic management (Amit and Zott, 2001; George and Bock, 2011), but due to the increased use of the business model concept in the last years, a further refinement may be helpful for delineating its more recent developments.

A systematic literature review on business model innovation over 14 years of research was conducted, considering papers from January 2000 to September 2014. The initial lists of academic journals included the Association's of Business Schools (ABS) grade four "General Management" and "Strategic Management" journals, namely *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Journal of Management*, *Journal of Management Studies*, *British Journal of Management*, *Harvard Business Review* and *Strategic Management Journal*. Then, grade four Journal from "Entrepreneurship and Small Business Management" field, represented by *Journal of Business Venturing* and *Entrepreneurship Theory and Practice* were also considered. The ISI Web of Science database was searched using the term "business model\*" <sup>1</sup> in the topic filter. The star after the term "business model" enlarges the Boolean search considering all those papers that contain adjacent terms, such as "business models" and "business modelling". Using the "topic" filter implies selecting all those papers that contain the term "business model\*" in either the title, the abstract or the keywords. The search came up with a total of 119 papers, of which 86 had appeared in Harvard Business Review.

This small set of articles led us to consider other two journals of grade four in an adjacent area, namely *Management Science* ("Operation Research and Management Science"), *Organization Science* ("Organization Studies") and *Research Policy* ("Social Science"). A total of 29 articles were found and added to the previously selected sample. After an initial analysis of the papers and looking at the references cited, it was noted that another journal needed to be included. An ABS grade three journal, namely *Long Range Planning* ("Strategic Management"), was also added to the former list, since two Special Issues on business model were published in 2010 and 2013, for a total of 40 papers. Hence, a total of 188 papers matched the Boolean search. These papers were saved, their abstracts were read and those papers that used the term "business model" in a non-marginal way were selected (Amit and Zott, 2001). A total of 76 articles was found and used as the basis of the review. Moreover, other relevant works were taken into consideration when reading these 76 articles. Table 1 provides a summary.

<sup>1</sup> The \* is used in order to extend the research to other terms, e.g. "business models" or "business modelling".

Tab. 1: Literature review steps

Steps	Details
1st step: search the literature	Time period: Jan. 2000- Sept. 2014
	Keyword used: "business model"
	Database: ISI Web of Science
	Sources considered: Grade four Journals of ABS Journals considered: <i>Academy of Management Journal</i> , <i>Academy of Management Review</i> , <i>Administrative Science Quarterly</i> , <i>Journal of Management</i> , <i>Journal of Management Studies</i> , <i>British Journal of Management</i> , <i>Harvard Business Review</i> and <i>Strategic Management Journal</i> , <i>Journal of Business Venturing</i> and <i>Entrepreneurship Theory and Practice</i>
	Total papers found: 119
2nd step: Extend the search of the literature	Time period: Jan. 2000- Sept. 2014
	Database: ISI Web of Science
	Sources considered: Grade four Journals of ABS Journals considered: <i>Management Science</i> , <i>Organization Science</i>
	Total papers found: 29
3rd step: Use snowball	Journal considered: <i>Long Range Planning</i>
	Total paper found: 40
4th step: skim the papers	Total paper selected: 76

Source: author

The analysis of these publications confirmed the importance of value creation, already stressed by previous literature (Zott *et al.*, 2011), and the link between business model and technology. However, it also pointed out the interest towards business model innovation, at both industry and firm level, and the way companies manage business model innovation. What emerged is that business model innovation is not clearly defined, and consequently not operationalized.

### 2.1 From business model to business model innovation

Many definitions of what a business model is have been provided, and a compelling, broad one has been identified by looking at the business model as the way a company creates and captures value (Baden-Fuller and Haefliger, 2013; Zott *et al.*, 2011). George and Bock (2011) narrow the definition of business model as the "*entrepreneurial ideation to a definable opportunity, establishing the relevant goal set that drives entrepreneurial action and organizational investiture, and bounds the implementation of organizational activities that enact opportunity*" (p. 99), and identify in resource structure, transactive structure, and value structure the three dimensions of a business model. David Teece argues that "a



*business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value"* (2010, p. 173). Moving a step forward, Baden-Fuller and Mangematin (2013) identify four business model dimensions, namely customer identification, customer engagement, value chain and linkages and monetization.

Irrespective of the business model definition adopted, as already anticipated in the introduction, business model innovation refers to rethinking the company's value proposition in order to exploit new opportunities (Bock *et al.*, 2012). This is in line with the aim of entrepreneurship, whose domain refers to the recognition and exploitation of new opportunities. Once a new opportunity emerges, entrepreneurs should be able not only to recognize it, but also to exploit it. It is not surprising, then, that most of the literature about business model innovation has looked to the advent of new technologies as one of the sources for new opportunities.

## *2.2 Business model innovation at industry and firm level*

Business model innovation may be analyzed at two levels: industry and firm levels. In the case of industry level, authors have analyzed how a "dominant" BM has been threatened by the emergence of a new BM (often introduced by a new entrant): examples are from the software industry (Bonaccorsi *et al.*, 2006; Suarez *et al.*, 2013), the football industry (McNamara *et al.*, 2013), the biotech industry (Mangematin *et al.*, 2003) and the movie industry (Gelfond, 2013). The new BM may sometimes change the evolution of the entire industry (Jacobides and Winter, 2012), as in the case of Google and Apple (Gambardella and McGahan, 2010). At firm level, authors have analyzed the (successful) BM of individual companies such as Arsenal FC (Demil and Lecocq, 2010), Naturehouse (Sosna *et al.*, 2010), LEGO, Coloplast and IBM (Hienerth *et al.*, 2011). Also, these companies may be incumbents, as well as new entrants.

From the analysis of these contributions, it emerges that studies on industry-based business models have mainly looked at business model kinds within one specific industry and their impact on firm's competitive advantage. On the other hand, those focused on firm-level business models have looked at firm's capabilities and processes (as described in Section 2.4), focusing more on the impact of specific factors, such as the role of the users (Hienerth *et al.*, 2011) or the adoption of ICT and Web 2.0 technologies (Wirtz *et al.*, 2010), on the (variously defined) dimensions of business model.

## *2.3 How does strategy impact business model innovation*

Extant research has shown that strategy is not the same as business model (Baden-Fuller and Mangematin, 2013; Casadesus-Masanell and Ricart, 2010; Magretta, 2002; Teece, 2010; Zott *et al.*, 2011), although they are related. Strategy and business model refer, in fact, to different factors, the former being more focused on value capture, competition and value for shareholders, while the latter focuses on value creation, cooperation and

value for stakeholders (Chesbrough and Rosenbloom 2002; Zott *et al.*, 2011).

Nonetheless, business model and strategy are interlinked. Previous literature has seen the business model as the reflection of a firm's realized strategy (Casadesus-Masanell and Ricart 2010), suggesting that strategy precedes business model. On the other hand, Teece (2010) asserts that a business model is more generic than a business strategy and it might be considered as a complement. According to George and Bock (2011), "*strategy is a dynamic set of initiatives, activities, and processes; the business model is a static configuration of organizational elements and activity characteristics. [...] Business models are opportunity-centric, while strategy is competitor or environment centric*" (p.102).

This paper adopts Casadesus-Masanell and Ricart (2010)'s view. According to them, strategy refers to the choice of the business model with which a firm chooses to compete (Casadesus-Masanell and Ricart, 2010). After having chosen a business model, the company can make residual choices (i.e. tactics) that are bounded by the business model it has chosen before. Hence, every time an entrepreneur or a manager changes strategy, he/she has to innovate, to a certain extent, the existing business model.

#### *2.4 How do companies manage business model innovation*

An emerging area of interest refers to how companies manage business model innovation. From the literature reviewed, only a small group of papers emerge on that topic. These papers are mainly linked with the exploration and exploitation processes (Andries *et al.*, 2013; Aspara *et al.*, 2013; Dunford *et al.*, 2010; Mason and Leek, 2008; Sabatier *et al.*, 2010; Sosna *et al.*, 2010; Velu & Stiles, 2013) and dynamic capability view (Achtenhagen *et al.*, 2013; Bock *et al.*, 2012; Doz and Kosonen, 2010; Mason and Leek, 2008), suggesting again a close relationship with the entrepreneurship field of research.

It also emerges that the owner and/or the managers have an important role in shaping business model innovation. Moreover, these studies look at the capabilities needed to innovate an existing business model (Achtenhagen *et al.*, 2013; Doz and Kosonen 2010) as well as the organizational structure (Mason and Leek 2008; Bock *et al.* 2012) and processes behind business model innovation (Sosna *et al.*, 2010; Dunford *et al.*, 2010). However, they only scantily provide insights on the many alternative configurations an entrepreneur or a company may choose from. Although clear in its general terms, defining what a business model innovation is and how both scholars and practitioners may come up with it, it is not so straightforward.

### **3. Toward a business model innovation typology**

Consistently with entrepreneurial research whose main focus is on the firm - and the entrepreneur (Shane and Venkataraman, 2000), this

paper focuses on business model innovation at firm level. To operationalize the business model innovation, it is important to define the business model precisely and identify the various dimensions of the business model.

As seen, literature on business model has defined the business model concept in terms of value creation and value capture. When defining the concept, these two dimensions are the two highest level components (“first level dimensions”) of the business model concept. However, due to the broadness of the concept and the possible overlapping with other business model related concepts (such as strategy), a further refinement is required. On the basis of the literature reviewed, the definition provided by Baden-Fuller and Haefliger (2013) and Baden-Fuller and Mangematin (2013) is adopted as the basis for building a new theoretical framework.

Baden-Fuller and Haefliger (2013) and Baden-Fuller and Mangematin (2013)<sup>2</sup> distinguish four business model dimensions (“second level dimensions”), two for value creation and two for value capture: customer identification, customer engagement, value chain linkages and monetization. Each of these can be further distinguished in other sub-dimensions (“third level components”).

Customer identification, a concept made up of two dimensions that have as a *fundamentum divisionis* “who pays”, may be distinguished between the customer and others. Customer identification is an important (second level) dimension since it enables researchers and practitioners to understand whether the business model is a one-sided platform or a multiple-sided platform. In particular, the advent of internet has increased the opportunities for companies to interact with multiple stakeholders and also for all the stakeholders to interact with each other. This implies that users generally have not paid for the companies’ value offering (for example, revenues may derive from advertisers). A clear example is a social network platform; social network users do not pay the platform for the service they receive, but the advertisers who use the platform for their advertisements do pay the service provider. This mode of payment points towards the crucial importance of network externalities; if the number of users using the social media platform is high, high is the chance that more third parties may be willing to use the social media platform for their advertisements. Consequently, the revenue generated by the platform will increase. Furthermore, if the social media platform has many users, the use value for the respective users will also increase.

Customer engagement, a concept made up of two dimensions that have as *fundamentum divisionis* “involvement of the customer”, see two main levels of involvement: high level of involvement (taxi) or low level of involvement (bus). As Baden Fuller and Haefliger (2013) note, taxi and bus require “different processes and mechanisms of ‘how they utilize ‘knowledge’ and

<sup>2</sup> Moreover, the adoption of Baden-Fuller and Haefliger (2013)’s BM dimensions for value creation and value capture activities is also supported by the fact that they go beyond Teece (2010)’s framework, introducing the multiple-sided element, i.e. they account for the presence of multiple business models in the same company at the same period of time. This is consistent with the most recent literature on business models (Andries *et al.*, 2013; Aspara *et al.*, 2013; Casadesus-Masanell and Tarzijàn, 2012; Casadesus-Masanell and Zhu, 2010; Sabatier *et al.*, 2010).

'routines'" (p. 421). Taxi refers to a project-based approach, thus requiring non-routine, complex tasks, flexibility and integration capabilities, while bus refers to a scale-based approach, thus implying less flexibility and more standardized processes.

Value chain linkages, a concept made up of two dimensions that have as *fundamentum divisionis* "governance structure", see market vs. hierarchy. This sub-dimension refers to the well-known literature about vertical integration systems and horizontal contracting (Teece, 1986; Williamson, 1985).

Finally, monetization, made up of two dimensions that have as *fundamentum divisionis* "type of payment", is described as direct vs. indirect. This sub-dimension is relatively under-explored by strategic and innovation management scholars, although some seminal works such as those of Casadesus-Masanell and Zhu (2010) have analyzed different business models by distinguishing them also on the basis of the type of payment (they have considered namely, a subscription-based model, an ad-sponsored model, a mixed model and a dual model).

These sub-dimensions provide the basis for the typology developed in this paper. If a business model is a concept defined by two first level dimensions (i.e. value creation and value capture), and as Baden-Fuller and Haefliger (2013) say, we can distinguish among four (second-level) dimensions (customer identification, customer engagement, value linkages and monetization) and we consider for each second-level dimension two polar sub-dimensions<sup>3</sup> (third-level), we end up with 16 possible combinations (given by 24, i.e. 16 ), that represent 16 unique business model configurations, as shown in Table 2.

In this paper, we argue that each company presents one (or more) business model(s) that can be positioned in Table 2. For example, if we consider a (fake) car manufacturer, named CARMAN, that sells one type of car (customer engagement = "bus") directly without the need of retailers, produces and delivers the car by itself (value chain linkages = "hierarchy") and collects money when it sells the car (monetization = "point of purchase"), we can represent its business model by BM6 (AABbCcDD).

On the basis of the previous typology, it is argued *that we observe a business model innovation every time a company changes one of its business model dimensions something that implies a new configuration of the extant business model*. The possibility of mapping a company's business model via considering the various dimensions and their subdimensions may allow scholars, as well as entrepreneurs, to think about alternative business model configurations.

In order to gain a better understanding of the typology of BMI proposed in this paper and clarify the link between BM and strategy, the following section examines how adopting a servitization strategy (Vandermerwe and Rada, 1988; Neely, 2008) by a manufacturing company requires a new business model configuration depending on the type of servitization strategy chosen.

<sup>3</sup> Note that in reality there is a continuity among polar "third level" dimensions.

Tab. 2: Business model typology

Elena Casprini  
Business model  
innovation: a typology

1 level {		VALUE CREATION AND VALUE CAPTURE							
2 level {		Customer identification (A)		Customer Engagement (B)		Value chain linkages (C)		Monetization (D)	
3 level {		Customer pays (AA)	Others pay (Aa)	Taxi (BB)	Bus (Bb)	Market (CC)	Hierarchy (Cc)	Direct (DD)	Indirect (Dd)
Business Model Types	1	X		X		X		X	
	2	X			X	X		X	
	3	X		X			X	X	
	4	X		X			X		X
	5	X			X		X		X
	6	X			X		X	X	
	7	X		X		X			X
	8	X			X	X			X
	9		X	X		X		X	
	10		X		X	X		X	
	11		X	X			X	X	
	12		X	X			X		X
	13		X		X		X		X
	14		X		X		X	X	
	15		X	X		X			X
	16		X		X	X			X

Source: author

#### 4. The Servitization of the Manufacturing Industry

“Servitization” is a term coined by Vandermerwe and Rada (1988) for defining “*the offer of integrated packages of products, services, support, self-service and knowledge to add value at company’s core businesses*”. The topic has attracted substantial attention at both national (Aquilani *et al.*, 2014) and international level as also shown by dedicated tracks during the 2014 Sinergie conference. Servitization has many definitions and synonyms in literature, however, (Baines *et al.*, 2009; Barquet *et al.*, 2013; Beuren *et al.*, 2013; Maglio and Sporer, 2008, 2013; Mathieu, 2001; Neely, 2008; Velamuri *et al.*, 2011), in this article, servitization is a strategy that manufacturing companies could pursue, and it comprises of a shift in the traditional product-based value proposition towards different levels of product-service systems (PSS).

Due to the several classifications provided and related to servitization options, there is a need to define our field of interest. In broad terms, servitizing implies adding services to existing products. However, how can services be added to product at company level? Company level services can be seen as the business offer (a value proposition made up by pure service), as part of the business offer (a value proposition made up by both product and service) and as provided internally to the firm (services at the process level). To the best of the author’s knowledge, amongst the various classifications present in the literature, Neely’s (2008) classification of servitization offers a precise, detailed and complete classification. According to him, there are

five options for servitization (Neely, 2008, p. 108); integration oriented product-service system (going downstream by adding services through vertical integration; this option basically consists of products plus services - e.g. retail and distribution); product oriented product-service system (providing additional services related to the product; this option basically consists of products plus services that are integral to the product - e.g. maintenance and support services); service oriented product-service system (incorporating services into the product itself; in this case we have a coupled product and service - e.g. health usage monitoring systems); use oriented product-service system (in which ownership is retained by the service provider who sells the function of the product - e.g. sharing, pooling, and leasing); and result oriented product-service system (the product is replaced by a service - e.g. the voicemail service).

Due to the fact that a business model creates value for the customer, this paper does not consider the integration oriented product-service system. The integration oriented product-service system, in fact, refers to the service at process level, creating value for the firm only. Table 3 provides the summary.

*Tab. 3: Classification of servitization strategies*

		SUB-LEVELS	NEELY (2008)'S CLASSIFICATION
LEVEL	Business offer	Pure Service	Result oriented Product-service system
		Product plus service	Use oriented Product-Service System
			Service oriented Product-Service System
			Product oriented Product-Service System
	Process	Service provided internally	Integration oriented Product-Service System

Source: author

Adopting one of the four servitization strategies considered (i.e. result oriented product-service-system, use oriented product-service system; service oriented product-service system; and product oriented product-service system) requires a change in one or more of the business model dimensions. Using the business model typology proposed in Table 2, the business model innovation required for each kind of servitization type is mapped.

Suppose that CARMAN, the (fake) example provided before, decides to servitize and has to choose which type of servitization strategy to adopt. In addition, on the basis of the servitization strategy adopted, CARMAN has to innovate its business model, changing one or more dimensions. Table 2 shows the 15 alternative configurations it can choose from, starting from BM6. For example, CARMAN can choose between:

- 1) adopting a product - oriented PSS, adding to the sale of the car the maintenance services or allowing the customer to personalize the car. In this case, the user is still the payer (AA), but he can personalize the car and choose the level of optional services wanted (BB). The

manufacturer can manufacture everything in-house (Cc) or decide to outsource the provision of optional services (CC). Payment can remain direct (DD);

- 2) adopting a service - oriented PSS, integrating the service into the product. In this case, the company integrates electronic devices in the car in order to provide instantaneous information about the road and/or instantaneous information about the car to third parties (such as insurance companies, police, etc.). In this latter case, the user still pays but alternative payers (e.g. police that wants to monitor traffic jams) can be found (Aa). Moreover, services can be customized (Bb). Hence, the manufacturer can change the value chain (for example allowing apps developers to join it) (CC). Monetization can remain direct (DD);
- 3) adopting a use oriented PSS. It implies that the company maintains the ownership of the car and gives it to the customer through pooling, sharing or leasing contracts. In this case, the manufacturer can adopt different monetization options (e.g. pay a monthly\annual fee or pay per hour) (Dd). The customer can choose between the type of contract, the features of the car and the modalities of 'picking up and delivery' (BB). The manufacturer could consider the option of networking with third parties (such as BlaBlaCar, Carpooling.com, Zipcar) (CC) or dedicating an ad hoc business unit for that (Cc), rather than reconverting itself into a pure service provider (eliminating the manufacturing activity and becoming a carpooling-service company as Carpooling.com). The money that is paid depends on the use (Dd) and ads;
- 4) adopting a result - oriented PSS. The customer benefits directly from the service and this service is a substitute for the product. In the case of a manufacturing company, the company can offer a "hire with driver" solution. In this case, the user calls the company and the company provides a car with the driver who drives the car in place of the user. The user pays the travel (i.e. it pays for a service, not the use of a product as in the case of use - oriented PSS or the ownership of the product, as in the case of product\service - oriented PSS) (DD) and this service is tailored to the needs of the user (BB).

In the example provided, there are dimensions that tend to be fixed or change slightly. For example, in all the cases described, the users pay (customer identification), although sometimes users may receive contributions from third parties (option 2). Other dimensions, instead, change more radically, such as the monetization and the customer engagement. What is interesting is that the value chain linkages present a very high level of flexibility in terms of choice. For the sake of simplicity, in terms of structure, the paper distinguishes hierarchy and network, but more fine-grained classifications can be adopted. As shown, multiple combinations between the dimensions are possible. How does an entrepreneur choose among them? Cognitive perspective could be a fruitful way of answering these types of questions (Porac *et al.*, 2011). Business model resides in the mind of the entrepreneur (or the top management team) and he/she chooses among alternative business model configurations on the basis of his/her perception of external environments.



## 5. Conclusion and further research

The main argument of the paper is that literature has not provided a precise and clear definition of business model innovation yet. Despite the narrow scope of the literature review and the absence of qualitative or quantitative evidence, the conceptual nature of this paper aims to provide a first contribution towards classifying business model innovation.

Building on the Baden-Fuller's and Haefliger's (2013) business model dimensions, a typology consisting of 16 business model configurations that should help both academics and entrepreneurs in multiple ways has been developed. For research purposes, having a framework capable of classifying a firm's business model may help the comparison between companies and within the company itself. Up to now, only a few contributions have evidenced the experimentation of multiple business models and interesting paths of research seem to be linked to the ambidexterity literature that may help understand the co-existence of multiple business models, or the dynamic capability view. In a recent paper, Markides (2013) identifies spatial separation, temporal separation, and contextual ambidexterity as possible ways to manage multiple business models within the same company. Thanks to the proposed framework, different configurations can be more easily compared. For example, we have seen that adopting one servitization strategy rather than another, requires a different business model configuration. What emerges is that entrepreneurs may choose not only between different configurations of business models following the choice of a strategy, but also between different business model configurations within the same strategy.

Moreover, having a framework which is able to trace the business model innovation that has been implemented, may be helpful in understanding how and why companies choose one specific business model over another. For example, investigating the capabilities required by manufacturing firms to successfully shift towards one specific configuration, and to what extent a business model innovation is better (in terms of performance) than another. It is suggested that taking a configurational approach (Drazin and van de Ven, 1985) and using fzQCA methodology (Fiss, 2011), as recently done by (Aversa *et al.*, 2015), may provide an interesting avenue of research. For example, preliminary empirical surveys on the impact of servitization strategy on businesses' performance have shown a paradox (Fang *et al.*, 2008; Neely, 2008), synthetized as the fact that "*substantial investment that extends the service business leads to increased service offerings and higher costs, but does not generate the correspondingly expected higher returns*" (Gebauer *et al.*, 2005) or "*why are servitized firms generating higher revenues but deliver lower profits than pure manufacturing firms*" (Neeley, 2008). A U-shaped relationship has been observed in recent empirical studies on servitization and performance (Suarez *et al.*, 2013; Visnjic and van Looy, 2013). Even though the performance of servitized firms is highly contingent on the industry, the nature and the size of the service portfolio (Visnjic and van Looy, 2013), accounting for different business model configurations may shed light on the servitization paradox.



The framework proposed allows also practitioners to explore which of the different configurations of business models are feasible for them. Entrepreneurs often have difficulties in choosing among alternatives, but not less often they are bounded within a smaller set of all the alternatives available. Being able to map an existing business model and figuring out possible paths of evolution may help them, on the one hand, to come up with multiple options and, on the other hand, to choose the most viable alternative(s). Other managerial implications refer to the opportunity to compare two or more ongoing business models in order to understand whether complementarities or divergences exist among their dimensions. This would allow entrepreneurs to better align multiple business models via intervening on those dimensions that would hamper the company. Finally, managers may also use the proposed framework for figuring out what kind of business model competitors are using.

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**Elena Casprini**  
Business model  
innovation: a typology

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# The internationalization of wine SMEs in the midst of the economic crisis: pilot case studies from Greece, Albania & FYROM

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## Abstract

**Purpose of the paper:** This paper explores the internationalization efforts of wine SMEs in three neighboring countries, namely Greece, Albania and FYROM. The aim is to identify particular issues faced by small wine producers in order to determine the variations among the countries.

**Methodology:** Multiple case study analysis was used. In depth interviews with two wine entrepreneurs from each country were conducted to examine the barriers they are facing with their export activities.

**Findings:** Interestingly enough, all three countries face similar barriers. The results indicate that negative Country of Origin Effect, Brand Equity and the Availability of Resources (due to their small size) are common and considered major export obstacles for the wine SMEs. However, although Greek wine SMEs have considerably more export experience and higher export performance, their negative Country of Origin Effect and Brand Equity remain major export obstacles.

**Research Limitations:** The main limitation of this study is the sample's characteristics, which do not allow for any generalization of the results and is not necessarily country representative.

**Research Implications:** This research identifies specific common and prevalent export barriers that the investigated wine SMEs in the region face. Further research is required to explore each of the issues in depth. Furthermore, it is suggested that future research should focus separately on internal or external barriers in order to gain more comprehensive insights.

**Originality of the paper:** This paper, to the best of our knowledge, is the first to examine and draw conclusions on the internationalization of wine SMEs in three countries of the Balkan Peninsula in the midst of the current economic crisis.

*Key words:* Wine SMEs; internationalization; exports; challenges; cross-border

## 1. Introduction

Today SMEs are facing more competition than ever as they are more exposed to globalization and its forces than larger enterprises. Most of the SMEs that face these challenges feel the need to expand on international markets, especially through export.

Export has several advantages, for instance a) they are not capital intensive, since no new investments in terms of facilities, have to be made

in foreign countries, b) their reduced risk compared to other kind of investments since, in the worst case scenario, the value of the shipment will not be collected, c) they allow the firm to better understand the requirements of foreign markets and d) exporting allows to examine to what degree the firm and the products/services it offers can be competitive in foreign markets.

However, export presents disadvantages such as: a) additional costs for transportation and promotion are required, b) they are susceptible to barriers imposed by other countries, c) there is no direct contact between the exporting firm and consumers, d) it is characterized by increased difficulty in providing aftersales services and e) there is a level of complexity to export processes (Hajidimitriou, 2003).

Currently, exports are the main alternative for many SMEs in the food and drink sectors to survive and grow in an increasingly competitive environment; therefore, it is very important to research the export obstacles they are facing. To the best of our knowledge, this is the first qualitative research on the internationalization of wine SMEs in three different Balkan countries in the midst of the ongoing economic crisis.

Furthermore, the wine sector is important for the economies of all three of the examined countries (Greece, Albania and FYROM). Greece has an established history of wine export, while the other two countries are at the initial stages of this effort; nevertheless, the trends are quite promising.

Greece is the 13th largest producer of wine in the world. The existence of small vineyards is the sector's main characteristic. Until 2009, 80% of the country's wine production was sold in the domestic market. However, in the course of the last few years the volume and value of Greek wine export has increased substantially. Germany is the main market for Greek wines (appr. 50% of total exports) while the US market is the most promising one, with an increase in export of more than 35% over the past few years.

Similarly, wine production in Albania has increased both in volume and value in the past decade (Scalera and Elezi, 2012). In 2013, there was a 30% increase of the exported wine compared to the previous year (Albanian Ministry of Agriculture, 2013). The U.S. is the largest export market for Albanian wineries (Scalera and Elezi, 2012). The main producers are small vineyards or small cooperatives that often market their wines under an "established" regional name.

Likewise, the wine sector is very important for the agricultural economy in FYROM; it accounts for 20% of the country's agricultural GDP and a significant percentage is exported (Dimitrievski and Kotevska, 2008). While the area cultivated with vineyards has remained the same, there is an increasing number of small private wineries, due to the breakdown of large wineries into numerous, small ones (Andersson and Ödlund, 2011). Europe and more specifically Germany, Croatia and Serbia, are the most important export markets for the country's wines.

According to Leonidou (2004, p. 297) there is need for further cross cultural studies that "*would capture the variations in export barriers*". Based on the above, this research aims to identify the existing export



obstacles for wine SMEs in the selected neighboring countries and determine the most important ones. According to Key *et al.* (2004) the first step in the problem solving process is to identify the problem, so by identifying export barriers future research on how to overcome them can be conducted.

The qualitative approach, and more specifically a multiple case studies analysis, was used for this pilot study. Qualitative research is carried out in order to establish the framework for future quantitative research. Two wine SMEs with export experience and similar characteristics were selected from each country and in depth interviews were conducted from which conclusions were drawn.

The first section of this paper reviews the relevant literature. More specifically, recent bibliography on export barriers for wine SMEs is discussed and the research question is determined. Next, the methodology part follows and the aspects of the research and the characteristics of the sample are presented. Following that, the findings of the in depth interviews are analyzed and discussed. In the last section, the practical implications of this work are presented along with suggestions for further research.

## 2. Literature review

### *Export barriers/ obstacles*

Firms benefit from export in terms of sales increase, higher profits, independency from the home market, etc. According to Yanopoulos (2010, pp. 36), “potential benefits include corporate growth, capacity utilization, economies of scale, market diversification, and smoothing out business cycles.” Alonso *et al.* (2014) argue that competition in the home market and opportunities in foreign ones motivate wine SMEs to focus their attention on international markets.

Despite the numerous benefits, there are several challenges companies need to overcome in order to expand in international markets (Karelakis *et al.*, 2008). Export performance and the behavior of wine SMEs can be affected by internal, as well as external, factors or barriers (Maurel, 2009). Ramasawami and Yang (1990) identified four variables that affect exports: a) export knowledge, b) internal resource constraints, c) obstacles related to procedures and d) barriers exogenous to the business. The first two are identified as internal factors and the remaining two as external ones.

### *Internal barriers*

Knowledge and resource constraints are mainly limitations of the firms' ability to provide resources, such as financial, human and production capacity, which are necessary for the internationalization process (Ortega, 2003). Export knowledge consists of the management's qualification level regarding internationalization activities, export practices and actions (Maurel, 2009). Olmos (2011) emphasizes the importance of human resources in wine SMEs in regard to their ability to penetrate international markets. Lack of qualifications and skills, related to export processes, are argued to be critical barriers that hinder the firms' export performance (Pinho and Martins, 2010). According to Alonso *et al.* (2014) qualified

Kevin Mullaymeri  
Athanasios Bizmpiroulas  
Olga Loznaliev  
Konstantinos Rotsios  
The internationalization  
of wine SMEs in the midst  
of the economic crisis:  
pilot case studies from  
Greece, Albania  
& FYROM

personnel is needed due to the complexity of the export processes. In contrast, Olmos and Vial (2014) argue that the increased availability of export services (from state agencies and private companies), has reduced the need for qualified personnel in wine SMEs.

Internal resource constraints (managerial, financial, etc.), are mainly associated with the firm's ability to support export processes (Pla- Barber and Alegre, 2007). According to previous studies, SMEs have a greater difficulty with overcoming these constraints as they avail themselves of fewer available resources compared to large firms (Pla- Barber and Alegre, 2007; Olmos, 2011). Karelakis *et al.* (2008) argue that there is a relation between the size and experience of wine firms and the difficulties they face during the export process. Moreover, the larger and more export experienced the firms are, the easier it is to overcome the barriers and to adapt to internal and external challenges (Lopez and Garcia, 2005).

#### *External barriers*

External barriers can be procedural ones, which are divided into two subcategories according Mariani *et al.* (2012), a) the tariff and b) non-tariff barriers. During the past decades, international trade has been facilitated by liberalization policies which had a positive impact on the wine industry. However, often tariffs are still imposed by several countries to indirectly assist domestic wine production (Mariani *et al.*, 2012).

Non-tariff barriers are grouped into “*labeling regulations, wine making practices, presence and levels of chemicals in the wines, certification and testing procedures*” (Mariani *et al.*, 2012, p. 35). Non-tariff barriers require firms to adapt, either in regards to the product and its quality or to documentation and other requirements (Chancy, 2002).

The Country of Origin Effect can either be an important obstacle or a competitive advantage. Wine SMEs from countries or regions with long winemaking tradition and reputation have a major competitive advantage (Agostino and Trivier, 2014). On the contrary, the same factor can be a barrier for SMEs in countries or regions without a winemaking reputation. Wine SMEs find it difficult to change the consumers' perception about the quality of their products on international markets. Their limited financial resources limit the options for marketing and promotional activities and result in limited Brand Recognition (Easingwood *et al.* 2011; Maldifassi and Caorsi, 2014), which in turn could assist in overcoming the Country of Origin Effect.

To the best of our knowledge, no previous cross country research has examined the barriers to the internationalization process of wine SMEs. In this paper the aim is to understand if the internal and external barriers that have been identified in the most recent relevant literature occur in the examined countries (Greece, Albania and FYROM). As Davies (2008) suggests, the qualitative approach allows for the examination of different perspectives; in this case the perspectives of the six wine exporters from these three different countries are investigated.

### 3. Methodology

Kevin Mullaymeri  
Athanasios Bizmpiroulas  
Olga Loznaliev  
Konstantinos Rotsios  
The internationalization  
of wine SMEs in the midst  
of the economic crisis:  
pilot case studies from  
Greece, Albania  
& FYROM

The objective of this research is to understand what wine SMEs perceive as export barriers in the three neighboring countries that have been examined (Greece, Albania and FYROM). In consideration of the aim of the study, which is to comprehend the barriers and draw comparisons, a qualitative approach was employed. An additional reason for choosing this approach was the difficulty of obtaining data from emerging markets in contrast to developed countries (Burgess and Steenkamp, 2006).

The multiple case studies analysis method was used in order to explore and understand the barriers that the wine SMEs from the three countries face. By using this type of analysis comparisons can be drawn so the selection of the firms was done very carefully (Yin, 2003). By comparing the differences and similarities among firms, knowledge on the subject of wine export SMEs may be further expanded (Van Wynsberghe and Khan, 2007). Given all the above, in depth interviews with six wine entrepreneurs were conducted in order to understand the export barriers that wine SMEs in these countries are facing.

#### *Sample*

Certain criteria were used in order to select a homogeneous sample of wine SMEs and receive meaningful answers. Firstly, only experienced exporters were interviewed in order to receive appropriate answers from SMEs that are currently active in export activities. More specifically, five of the SMEs have been exporting for over 10 years. Next, over 30% their total production had to be exported. An additional criterion was for the firms to export to developed and mature markets (the US, Europe, Australia, etc.). It should be noted that all respondents consider their wines to be of average to high quality and of average price compared to the price index of the countries they export to. All of them target middle-income level customers. Finally, all entrepreneurs, with the exception of one, have modified the package and label of their products in order to export to international markets. All interviewees were contacted by phone and they accepted to participate without any incentive. Because of the criteria set, the sample cannot be characterized as random, since many wineries operate in all three countries and do not necessarily meet the sample's selection criteria.

#### *Methods*

A semi-structured interview guide was designed with the assistance of academic colleagues with expertise on wine. In addition, it was analyzed and discussed with a wine entrepreneur to check its clarity and cohesion. The first section includes general questions on the firm's profile, main activities and products. The second part focuses on the barriers and challenges wine entrepreneurs face regarding their export activities.

The guide, accompanied by a cover letter explaining the aim of the study, was sent in advance to the enterprises. Interviews were arranged with the SMEs representatives. Due to the nature and complexity of the questions, the owners or general managers of the SMEs were interviewed since they have a more comprehensive view of the current situation. Their

anonymity was guaranteed by the researchers in order to receive detailed, open and sincere answers. To increase the accuracy of the questions the interviews were conducted in the respondents' native language and lasted approximately one hour each. The six interviewees are identified as Gr1, Gr2 for the Greek SMEs, Al1, Al2 for the Albanian ones, and FYR1 and FYR2 for the SMEs from FYROM.

#### **4. Analysis**

As noted earlier, the sample consists of six wine SMEs with similar characteristics regarding their export experience, the percentage of exported sales, the quality and price of their products, and their target consumers and markets. The export barriers presented to the respondents were: a) country specific factors (country of origin, regulations, logistics, bureaucracy, export taxation, political instability and country relations), b) financial barriers (transportation costs, production costs, quantities produced), and c) marketing related barriers (brand awareness, competition, cost of marketing related activities, customer perceptions). A brief discussion on the interview findings follows in the next session. The focus is on the most important factors as identified by the firms' representatives.

##### *Wineries from Greece*

The export barriers the Gr1 firm is facing are mainly a consequence of limited resources; more specifically, they arise from the high investment requirements needed to increase the winery's production capacity and upgrade its equipment. The lack of (necessary) resources (financial and human) to support the necessary marketing activities is also considered as an important export barrier. There is a need to continuously invest in human resources and upgrade the vineyard and its facilities in order to remain competitive in the developed international markets. These obstacles are similar to the ones analyzed in the literature regarding wine SMEs compared to larger size firms (Pla-Barber and Alegre, 2007; Olmos, 2011).

The main export barrier for the Gr2 winery is the quantity of wine produced which is not sufficient to sustain the firms' export activity. In order to address this issue and further increase production capacity, significant financial resources have been invested. However, this has resulted in a very low return on investment, which has affected the firms' overall financial stability. In addition, the Country's Image and the Country of Origin Effect are also considered major export barriers. This is in accordance with the findings of D'Alessandro and Pecotich (2013), who suggest that the Country of Origin Effect is often used by consumers as an evaluation tool regarding the quality and price/value of the product.

##### *Wineries from Albania*

One of the main export barriers that both Al1 and Al2 are facing is the Country's Image in international markets when compared with other

wine producing countries. More specifically, the respondents from wine exporting SMEs state that people perceived the quality of their wine products to be of lower standards. In addition, A11 said that they face difficulties in complying with US market regulations; the fact that they are different than E.U. ones makes this task more challenging. These findings are similar to Mariani *et al.* (2012), who argue that non-tariff barriers are perceived as too complex for SMEs to overcome and can negatively affect international trade.

Kevin Mullaier  
Athanasios Bizmpiroulas  
Olga Lozalieva  
Konstantinos Rotsios  
The internationalization  
of wine SMEs in the midst  
of the economic crisis:  
pilot case studies from  
Greece, Albania  
& FYROM

#### *Wineries from FYROM*

The representative of FYR1 identified the intense competition in developed markets as their main export barrier. Similarly, Lopez and Garcia (2005) suggest that SMEs find it more difficult to overcome export challenges than large enterprises. Another significant barrier is the region's lack of reputation as a wine producing area. In addition, the fact that the country is not an EU member and that the Balkan countries are not perceived as producers of good quality wines, is also an obstacle.

According to the respondent from FYR2, a major obstacle is the fact that the country is not associated with the production of high quality wines yet. As regards the firm's recognition (brand awareness) in international markets, they face difficulties in implementing marketing strategies, since they cannot fully support them due to limited financial resources. Another challenge is to meet the export requirements to EU countries/markets.

### **5. Discussion**

Interestingly enough, some common export barriers for the wine SMEs have emerged as the most challenging ones among all three countries. In particular, negative Country of Origin Effect, Brand Equity and Availability of Resources were reported as the main obstacles for the wine SMEs in the three countries.

#### *Negative Country of Origin Effect*

The Country of Origin Effect has a strong impact on wine consumer perceptions (Agostino and Trivier, 2014). There is a consensus among the respondents that the Country of Origin Effect hinders their export performance. Furthermore, the wines produced in Albania and FYROM are perceived by local consumers to be of inferior quality compared to imported ones. Firms operating in these countries face major obstacles when persuading international consumers of the quality of their products, because their country's image, as perceived by foreign consumers, is still not positively associated with the production of high quality wines. This can be explained by the fact that wine exports from these two countries have only recently started, whereas Greek wines have had a longer presence in international markets. Interestingly enough, negative country of origin impact involves Greek wine SMEs as well.

#### *Availability of resources*

Due to the small size of the wineries, most of the respondents consider the lack of available resources a major drawback in their exporting efforts.

Interestingly enough, Greek wine exporting SMEs face more financial difficulties in comparison to the ones from emerging wine exporting countries, illustrating the depth of the recession that Greece is facing. The findings of Wickramasekeraa and Bianchi (2012), which identify the lack of financial resources, the limited quantity produced and the lack of skilled staff, as the main hindering export factors, are in line with the sample examined in this study. The above are often observed in SMEs and a result of poor organizational and financial performance. According to Ortega (2003), there is a limitation of strategic options for SMEs due to the availability of resources; these limitations prevent them from building a sustainable competitive advantage. Although informal associations and wine producers' clusters from the specific regions have been established, in many cases they have not been capable of supporting export activities. Other forms of collaboration with structured, formal associations could offer a solution to overcome export obstacles.

#### *Building brand equity*

According to Nowak *et al.* (2006) all wineries seek to build their Brand Equity. Similarly, other studies indicate that developing a strong brand identity is particularly important for wine SMEs (Miller and Chadee, 2008).

Brand Equity emerges as a major issue: however, although its importance is well understood by entrepreneurs, it appears to be an issue that cannot be easily addressed. Significantly, this is an issue for Greek wine SMEs too, even though they have more export experience than those from Albania and FYROM. Apparently, Brand Equity is not related to the overall Country of Origin Effect. Previous studies on the branding strategies of wine SMEs have concluded that the formation of clusters and networks improve "brand awareness" (Vlachvei *et al.*, 2012). However, in the majority of the cases examined, wine associations either do not operate in their areas, or if they do, their contribution is considered to be minimal.

Brand Identity can also be developed by "positive winery experiences", as suggested by Nella and Christou (2014). According to their findings, service quality at the cellar door can facilitate the creation of Brand Equity. Overall, visits to wineries are considered a marketing tool that enhances Brand Equity. Brand Equity can also be built by the "tasting room experience" (Nowak *et al.*, 2006): based on their findings, wineries can cultivate long term relationships and build Brand Equity by offering positive tasting room experiences. However, the issue should be further investigated and the ways wine SMEs in the region are currently striving to build Brand Equity should be identified and assessed.

## **6. Conclusion: implications for further research**

This paper provides an insight into the export efforts of wine SMEs from the Balkan Peninsula and more specifically from Greece, Albania and FYROM. The aim is to understand the export constraints that wine

SMEs in the region face. Through in depth interviews, common obstacles to export efforts of wine SMEs were identified. The results of this qualitative research indicate that issues of negative Country of Origin effect, Brand Equity and Availability of Resources, are common in wine SMEs in the investigated region.

Interestingly enough, despite the country's overall position in the wine market (Greek wineries are by far more experienced in terms of exports and are larger wine exporters) the negative Country of Origin Effect still hinders the producers' export performance and is perceived to be a major obstacle. In addition, weak Brand Awareness is also identified as an important barrier. Various ways of building Brand Equity have been extensively analyzed in literature, including membership in producer/exporter associations and participation in wine routes (Vlachvei *et al.*, 2012; Nella and Christou, 2014). Apparently, SMEs lack the resources to build Brand Equity and to have a strategic approach towards export and the means to expand their international activities. The respondents in this study did not appear convinced about the effectiveness of associations and other collaborative schemes and actions. This perception is significant and should be further explored.

The previously mentioned "cross border" issues and obstacles should be further studied both at the regional and the country level. Although wine SMEs operate in different economic and political environment they face similar challenges. Despite the fact that common barriers have been identified, common solutions do not seem appropriate due to country-specific factors. However it is worth examining if the successful strategies implemented by some wine SMEs could be adopted by other small, local wineries.

The interviewees presented their perspective regarding the export barriers they face, most of which are in accordance with the ones identified in literature. These barriers however, are very difficult to overcome, due to the wineries' size. The situation has become more serious due to the ongoing financial crisis in all three countries. A possible solution might be the formation and establishment of collaborative arrangements between wine SMEs, (formal or informal partnerships, associations and cooperations). Future research should examine the forms of cooperation that wine exporters in these countries could establish in order to overcome common export barriers.

Furthermore, the negative Country of Origin Effect, which is an external barrier, requires governments and export associations to take initiatives and actions, as well as lobbying efforts by producers. The degree to which wine exporters are willing to participate in the efforts to change consumers' perception regarding the country of origin has to be further explored. The need for further research on the topic becomes greater when considering that all interviewed producers appeared very skeptical about the efficiency and effectiveness of these actions, even if they do not require major direct investments (collaborations, membership in wine associations and wine routes, provision of services like winery tours/ wine tasting, etc.).

The identification of these issues has practical implications for wine SMEs with less export experience since it provides an insight for the

Kevin Mullaymeri  
Athanasios Bizmpiroulas  
Olga Loznaliev  
Konstantinos Rotsios  
The internationalization  
of wine SMEs in the midst  
of the economic crisis:  
pilot case studies from  
Greece, Albania  
& FYROM



challenges they will most likely face during their export effort. For “more export experienced” ones, the identification of these common parameters leads them to seek solutions either at a firm or at a collaborative level. In addition, the results are of value for policy-makers and individuals involved in the design of Cross-Border collaboration programs among the regions of specific countries. Furthermore, this study provides a relevant and recent literature review on identified export barriers and sets the framework for future quantitative research on the topic.

#### *Research limitations and recommendations for future Research*

The main limitation of this study is that no additional methods of qualitative analysis were employed. Furthermore, due to the sample's size and the criteria used for sample selection, the sample cannot be considered representative of all the wine exporting firms in these countries.

The results of this research provide an insight into the internalization barriers of wine SMEs and intend to serve as the basis of further research. Some aspects that have emerged during the interviews and are worth exploring in the future are the processes of selecting and evaluating the international markets. Furthermore, an in-depth analysis of the solutions implemented in established wine producing countries and wineries is required in order to explore their applicability in the region. Finally, this research provides an insight into the challenges exporters face, which, despite the difference in environments, are inherently the same for wine SMEs in the region.

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Kevin Mullaymeri  
Athanasios Bizmpiroulas  
Olga Loznaliev  
Konstantinos Rotsios  
The internationalization  
of wine SMEs in the midst  
of the economic crisis:  
pilot case studies from  
Greece, Albania  
& FYROM

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**Feature**



Alex Douglas

World-wide there are approximately 137.000 new businesses launched every day. Unfortunately this is offset by some 120.000 business terminations each day. In the European Union (EU), for any given year the start-up and termination rates of enterprises tend to be around 10% of the number of active enterprises. The one year survival rate for enterprises created in 2011 was 83% whilst the five year survival rate for enterprises started in 2007 and still active in 2012 was 45% (European Commission Statistics, 2014). Survival and sustainability are major issues.

Small to medium sized enterprises (SMEs) play a dominant role in many EU countries. In 2012, almost 99,8% of companies across the EU were designated as SMEs. These companies provide jobs for between 52% (UK) and 80% (Italy) of all employees and many countries depend on them for economic growth. Therefore boosting the survival rates and increasing the sustainability of these and other enterprises would have a positive impact on productivity and employment. However, healthy, quality oriented companies create innovation in their service and products and this is detrimental to those companies that fail to innovate and hence lose their competitiveness and are eventually forced out of business. So how can firms avoid losing their competitiveness and achieve sustainability?

A sustainable business, organisation or enterprise is one that is maintainable over time - a long-term success story. In order for this to happen an organisation must first achieve, and then maintain, superior competitive performance. This does not happen by accident. An organisation must seek to continually improve over the long haul. To stagnate is to perish. Today's world class performance is tomorrow's third rate performance. This is where Total Quality Management (TQM) can help. TQM is not about certification or compliance to standards. These are about doing things right - efficiency. TQM is about doing the right things right - efficiency and effectiveness. Sustainability cannot be achieved by doing the wrong things right.

TQM can contribute to improvements in customer satisfaction and business performance because it is based on a constant drive for continuous improvement. But how does this happen? The relationship can best be described as a "cause and effect" one. The effect or outcome is sustained business performance and customer satisfaction and the process by which this is achieved or "cause" is TQM. It is much like the EFQM Excellence Model criteria where organisational performance (the results) are caused by inter alia, having the right leadership, strategy, people, products and processes (the enablers).

In order to attain organisational performance that will lead to sustainability both the "hard" or technical dimension of TQM and the "soft" or cultural dimension of TQM must be equally addressed. Both contribute to this continuous improvement ethos.

Unfortunately western managers find it easier to manage and implement the “hard” dimension of TQM and so tend to focus on measures, targets and techniques with only “lip service” being paid to the “soft” dimension. This has led to sub-optimisation of both TQM and organisation performance that endangers organisational sustainability. The “soft” dimension of TQM encourages teamwork and a participative management style that empowers all employees.

Without this organisations will be unable to harness the skills, knowledge and brainpower of their employees and it is this that will ultimately make an organisation as competitive as possible with its overarching goal to be the best in the business. Without this competitive advantage there can be no sustainability.

People matter because quality goods and services are delivered by people, for people to people. There is a body of research that has proven that satisfied employees deliver satisfied customers. Well trained employees are more able to do the job right first time than untrained employees. Motivated employees give superior performance to unmotivated employees. A TQM culture must be created that empowers staff so they will continually look for ways of doing the job better – it is the person or people doing the job that are best placed to know when processes are going wrong as well as suggesting ways to improve those processes, and in some cases the product, to the benefit of both the organisation and its customers. All of this requires the total commitment of senior management.

Today Japanese companies such as Bridgestone and Komatsu talk about Dantotsu. It is the latest development in TQM’s evolution. It has no equivalent English translation but roughly means “better than the best” or “number one thinking”.

This thinking is driving Japanese companies to try and be the number one, not just as a company in their industry sector, but for every single product they make. Dantotsu when describing products means “unrivalled” products, in other words superior to the products of competitors. It is this superiority of products that will maintain their competitive advantage. Komatsu, the Japanese manufacturer of construction and mining equipment started its dantotsu strategy in 2003 and of the, approximately, 150 products it makes it claims that 87% are ranked either number one or number two globally.

They are delivering innovative products that customers want today but they are also trying to anticipate their customers’ future needs as well. It is such innovative thinking regarding customers’ future product needs that will sustain the company’s competitive position over the long term.

In summary, sustainability is a big issue for many companies and impacts many economies world-wide.

Sustainability of businesses is a win-win-win situation. The company wins, the employees win and the country (economy) wins. It is businesses that create the wealth of nations. This sustainability can only be achieved by continually improving and maintaining competitiveness.

TQM can drive continuous improvement but only if the “hard” and “soft” dimensions are equally addressed. It is the “soft” dimension that

will allow organisations to utilise their people to the full extent and harness their expertise and creativity. Creating innovative goods and services that customers want is a sure way to sustainability.

**Alex Douglas**  
TQM and Sustainability

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# Effects of customer education in terms of customer perceived value: the role of customer evaluation skills<sup>1</sup>

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## Abstract

**Purpose of the paper:** The aim of this study is to propose a theoretically grounded conceptual framework focusing on the effects of customer education process in terms of customer perceived value. In doing so, it especially highlights the role of customer evaluation skills.

**Methodology:** This is a conceptual paper whose analytical approach draws heavily on theoretical evidence published in service marketing and management literature. Using this analysis, nine research propositions are developed to highlight the relationships between customer education, evaluation skills and perceived value.

**Findings:** Customer education is a under-researched concept in the service marketing and management literature. It is a process aimed at informing and training customers in order to increase their knowledge levels (basic, general, and deep). It affects customer perceived value in terms of benefits (skill of information evaluation, satisfaction and appreciation, perceived risk, purchasing power, and protection of rights and interests), and outlays (economic commitment, product complexity, information accessibility, time employed, cognitive and behavioral effort, and resulting stress). Customer evaluation skills mediate this relationship by allowing customers to perceive value in the function of the different knowledge levels acquired.

**Practical implications:** Providing customers with a number of information and cognitive tools for evaluating products reduces information asymmetries between a company and its customers. Therefore, at least in principle, this can reduce the power of the company. Managers should consider this risk by both creating knowledge about service alternatives and evaluating what information can be offered to customers for increasing their knowledge levels. Managers should favour the development of initiatives aimed at strengthening customers education because it allow companies to obtain a number of advantages.

**Originality of the paper:** The study contributes to enriching the analyses the post-purchase evaluation phase by proposing a conceptual framework primarily considering cognitive dimension of customer education.

**Key words:** customer education; customer perceived value; service quality; customer knowledge; customer evaluation skill

<sup>1</sup> Best paper for the 17<sup>th</sup> Toulon-Verona Conference “Excellence in Services”, Liverpool, August 28-29, 2014.

While this paper is the result of reflections made jointly by the authors, in terms of final drawing up, paragraphs 1, 4, 5 are to be ascribed to Federico Brunetti, and paragraphs 2 and 3 to Angelo Bonfanti.

## 1. Introduction

Strong propensity of consumers to self-service, practice and less time spent on purchases, as well as better knowledge of products, contribute to commoditise goods (convenience and shopping) and services. Companies generally react by adopting a differentiation strategy for their products with respect to those of competitors (Rangan and Bowman, 1992) through enhancing or innovating attributes that are meaningful, relevant and valuable for customers (Carpenter *et al.*, 1994). As benefits provided by means of the differentiation are not readily available from other substitutes, customers become less sensitive to price differentials (Barney, 2007). Over time, customers tend to get used to additional benefits and so become less willing to pay any premium price. In addition, competitors may imitate product innovations, introduce superior attributes or launch the same but lower-priced products. In this way, the advantages previously obtained are diluted (Porter, 1980). Therefore, differentiation only provides temporary advantages (Rangan and Bowman, 1992; D'Aveni, 2010). In addition, it is a futile strategy in some business contexts, such as food product marketing (McGrath, 2013; Sogn-Grundvåg and Young, 2013).

As customers commoditise purchases if their involvement is low, commoditisation processes can induce customers, even if well informed and careful, not to perceive value in terms of cognitive and emotional understanding and involvement, of goods and services they intend to buy. In order to deal with this problem, companies may invest in consumer education by offering to customers information useful for shopping and product usage, and by creating the conditions for developing the skill to capitalise on such expert information.

Studies in consumer education conducted since the 1970s have embodied economic (e.g. Armstrong and Uhl, 1971; LaForge, 1989) and marketing (e.g. McNeal, 1978; Fast *et al.*, 1989; Carsky, 1991) perspectives. Today this topic is also examined with specific regard to private and public initiatives to adopt sustainable consumption behavior (e.g., Goldsmith and Piscopo, 2014). Essentially, these studies aim to protect consumers' interests and address the topic from the consumer's point of view. Several studies focus on consumer education programmes (e.g. Bloom and Ford, 1979; Oumlil *et al.*, 2000; Xiao *et al.*, 2004; Makela and Peters, 2004; Aubert and Gotteland, 2010). As with goods marketing, only recently has the consumer education issue been examined in the service marketing literature (Oumlil *et al.*, 2000; Burton, 2002). Such studies on services highlight that consumer education is mainly based on the following three elements: a) presentation of information related to goods, services and their providers, b) improvement of basic and in-depth knowledge, and c) development of skills to use information. Effects of information on consumer behaviour have particularly been discussed with regard to services' intangibility (see Murray, 1991). Recently consumer education and information have been seen as concepts intended as part of a continuum in which consumer information is a lower-level activity useful for achieving a basic knowledge, whereas consumer education is at

a higher and advanced level of knowledge (Burton, 2002). For us, educating consumers requires that companies not only provide information but also create conditions that allow customers to evaluate such information, increase their level of knowledge and understanding, and feel involved in their purchasing activities. In this way, consumer education is a process through which customers can improve their perceived value.

This paper proposes a theoretically grounded conceptual framework focusing on the effects of customer education in terms of customer perceived value. In doing so, it especially highlights the role of customer evaluation skills. It primarily considers the cognitive dimension, which is not affective and emotional, of the post-purchase evaluation phase. According to Aubert's study (2008), we focus on this phase for the increasing complexity of products (Thompson *et al.*, 2005), and the importance given to consumption in value creation (Vargo and Lusch, 2004).

The study particularly contributes to enriching the analyses of customer education in the following five ways: 1) it offers an overview of the consumer education issue in a service marketing perspective; 2) it proposes a conceptual framework aimed at highlighting customer education as process feeding a number of consumer's knowledge levels, and the effects of customer education in terms of perceived value by outlining the role of customer evaluation skills; 3) it examines the benefits and outlays that educated customers can perceive; 4) it suggests a number of practical implications to managers that want to invest in customer education for improving customer perceived value; and 5) it provides some research directions in order to encourage future researchers to explore this area in greater depth.

This is a conceptual paper whose analytical approach draws heavily on theoretical evidence published mainly in the service marketing and management literature. Using this analysis, nine propositions are developed to examine the relationships between customer education process, evaluation skills and perceived value. Each research proposition is also supported by some actual examples whose applicability to different types of services makes an increased comprehensibility of the paper.

## 2. Consumer education in service marketing and management literature

Customer education is defined as the companies' investments in instructional activities aimed at improving customer expertise in relation to the goods and services they market (Honebein and Cammarano, 2005).

With the exception of consumer misbehaviour studies (e.g. Harris and Reynolds, 2003; Reynolds and Harris, 2009; Fisk *et al.*, 2010; Baccarani and Brunetti, 2011; Daunt and Harris, 2012), research focused on consumer education in a service context is particularly limited (Fast *et al.*, 1989). It is specifically related to the context of technical services such as specialist information technology suppliers, where information alone is often insufficient to ensure high levels of service quality (Carsky, 1991).

Consumer education is examined with respect to: a) importance of consumer education programmes; b) relationship between consumer education and service quality; and c) relationship between consumer education and customer perceived value.

### *2.1 Importance of consumer education programmes*

If consumers are informed and educated about the expectations and features of services and collaborate with service providers, service performance will be successful. In other words, the effectiveness of the service delivery process depends on the role played by consumers (as well as service personnel) during service encounters (Solomon *et al.*, 1985). One of the factors that affects service performance is the script defined as “a coherent sequence of events expected by the individual, involving him either as a participant or as an observer” (Abelson, 1976, p. 33).

In order to perform their role, as well as sticking to the service script, consumers must be educated in sociality: by means of the socialisation process, consumers are able to understand the service organisation's values, as well as how to operate within the servicescape and develop knowledge and skills useful to interact with employees and other customers during service encounters (Kelley *et al.*, 1990).

To this end, consumer education programmes are useful in helping consumers to understand their role and what they can expect from the service delivery process, even before they experience it. Such programmes include formalised consumer orientation programmes, written documents provided to customers (Zeithaml *et al.*, 2012), learning by service personnel and other customers or users, and signals and cues allocated within the servicescape (Bonfanti, 2013).

Specific studies focus on consumer education programmes for mature consumers (Oumlil *et al.*, 2000) suffering from a disorder termed “learned helplessness” by psychologists (LaForge, 1989). Concerns about organisations and the consumption process, physical disability, financial instability (LaForge, 1989) and lack of experience (Aronson, 1993) can cause a feeling of helplessness and loss of control over various activities. Such programmes contribute to prepare elderly consumers to more adroitly confront the marketplace.

### *2.2 Relationship between consumer education and service quality*

Burton's (2002) study identifies three different approaches to the relationships between consumer education and service quality.

The first approach argues that consumer education can be used as a core element of service quality in a competitive strategy perspective: consumer education allows differentiation of service organisations from competitors, adds value to service offerings, increases loyalty and assists in customer retention (Burton, 2002). In addition, consumer education can help service organisations to obtain and keep satisfied customers, contribute to the favourable attitude among consumers towards a product or company and reduce confrontation with consumer advocates (McNeal, 1978). Financial (e.g. Dery, 1998), software (e.g. Kaeter, 1994) and healthcare services (e.g. Gummeson, 2000) are some of the service contexts more often examined in the service marketing and management literature.

The second approach is based on the assumption that consumers need to be educated in a post-modern world. Service organisations should educate themselves about the change of consumer behaviour, which is depicted as powerful and reflexive (e.g. Brown, 1995; Firat *et al.*, 1995). However, it is impossible precisely to define such behaviour (Cova, 1999). In addition, an informed consumer is one empowered to make decisions and participate meaningfully in the customer-provider relationship (Bielavitz *et al.*, 2011).

The third approach assumes that concepts of consumer education and service quality are not associated with each other. When a consumer is educated, they are able to identify poor service quality. This change is damaging for any service organisation, such as financial services (Burton, 1994). Education leads to a reduction in information asymmetries between the firm and its customers. Service organisations could paradoxically maintain such information asymmetry and not reconfigure the knowledge relationship (Nayyar, 1990). Customer education has been found to be positively associated with customer expertise (Bell and Eisingerich, 2007): if customer expertise is high, the positive effect of technical service quality on customer loyalty is indeed stronger, while the positive relationship between functional service quality and customer loyalty decreases. In addition, when customers become expert, they perceive a reduced risk in switching firms and, as a result, are more confident in assessing competitive alternatives (Heilman *et al.*, 2000).

### *2.3 Relationship between consumer education and customer perceived value*

In the service marketing and management literature, consumer education studies highlight the importance of presenting information related to goods, services and their providers, to improve basic and in-depth knowledge and develop skills for using information in a service quality perspective (Oumlil *et al.*, 2000; Burton, 2002).

Customer education can also be analysed in terms of customer perceived value, which is fundamentally defined in a service marketing perspective in the following ways (Zeithaml, 1988): a) value is a low price; b) value is everything I want in goods or a service; c) value is quality obtained in exchange for the price paid; d) value is what I get in return for what I give. In the latter sense, the customer perceived value concept is an expression of the benchmark between benefits that customers receive by service performance or a satisfactory purchase in relation to perceived outlays or sacrifices made in order to obtain that particular service or goods (Ravald and Grönroos, 1996; Grönroos, 1997).

Lovelock (2001) argues that perceived value can be enhanced by adding benefits to the service or by reducing outlays associated with purchase. Accordingly, if the sacrifice made is not too high, customers recognise a high perceived value level (Lovelock, 1995).

In this paper we highlight the relationship existing between consumer education process and customer perceived value.

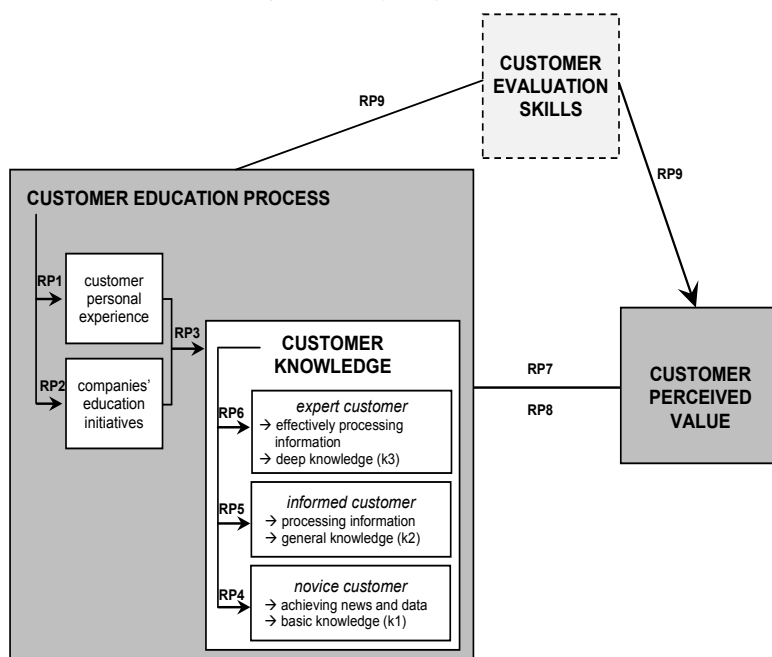
### 3. Effects of customer education process: a conceptual framework

Customer education is a concept variously defined in the literature, notably in consumer behaviour studies. Nelson *et al.* (1977) argue that consumer education includes the development of skills, concepts and understanding to help consumers attain a maximum level of satisfaction and utilisation of their human and material resources. Wells and Atherton (1998) maintain that consumer education is concerned with the skills, attitudes, knowledge and understanding needed by individuals living in a consumer society. Bannister and Monsma (1982) define consumer education as the process of gaining the knowledge and skills needed to manage consumer resources and take action to influence those factors, which affect consumer decisions.

In this section, we develop a conceptual framework highlighting the following three aspects: 1) sources of customer education; 2) effects of customer education in terms of customer perceived value, and 3) role of customer evaluation skills in affecting this relationship (see Figure 1).

We will discuss these constructs and their relationships by presenting corresponding and testable research propositions (RPs).

Fig. 1: A conceptual framework



Source: Our elaboration

#### 3.1 Sources of customer education

Customers personal experiences contribute to generating their education process. Personal experience is subjective in nature; it includes



the interactions people develop both by using a good or service and during the purchasing process, service encounters and more generally, different stages of life. Recent definitions of customer experience highlight that “customer experience originates from a set of interactions between a customer and a product, a company, or part of its organization, which provoke a reaction. This experience is strictly personal and implies the customer’s involvement at different levels (rational, emotional, sensorial, physical, and spiritual)” (Gentile *et al.*, 2007, p. 397). In addition, “customer experience is the internal and subjective response customers have to any direct or indirect contact with a company. Direct contact generally occurs in the course of purchase, use, and service and is usually initiated by the customer. Indirect contact most often involves unplanned encounters with representatives of a company’s product, service or brand and takes the form of word-of-mouth recommendations or criticisms, advertising, news reports, reviews and so forth” (Meyer and Schwager, 2007, p. 118). Customer experience can also be defined by means of two sub-constructs: 1) intensiveness, which is ‘the amount or the frequency with which a person has been exposed to a product category’, and 2) extensiveness, which is ‘the breadth or the variety of exposure a person has accumulated in a product environment throughout her consumption history’ (Hoeffler *et al.*, 2013, p. 332). Customer experience affects the preference learning and formation process. Customers can accumulate experiences by developing curiosity and interest for a topic in a number of ways, such as participating in training courses, reading specialised magazines, living experiences in relation to purchase of goods and services, relating to experts, as well as gathering information by means of websites, word-of-mouth, recommendations, criticisms, advertising, news and reports. Therefore, the following proposition is made:  
*RP1: Customer education is a process including customer personal experiences.*

Also, education initiatives provided by companies contribute to improve customer education. Such actions are objective in nature and include customer education programmes such as seminars and training activities, as well as external communication activities such as printed materials (e.g. instruction booklets, flyers and tourist guides), websites, e-mail, consulting services and personal advice.

Education programmes allow customers to obtain information and advice, learn how to make rational and efficient future choices, and protect their rights. Research on consumer behaviour (e.g. Garman, 1979; Mathew, 2014) has highlighted that a positive relationship exists between participation in customer education programmes and knowledge levels. With specific regards to knowledge of safety principles, Staelin (1978) noted how increased knowledge leads to safe behaviour, as the consumer both has a better understanding of how products work, and is more able to accurately assess the hazards associated with these products.

In order to increase customer knowledge levels, companies can develop a number of fundamental communication activities (Zeithaml *et al.*, 2012). Providing information by preparing customers for service delivery is useful to novice customers who need to be informed and trained, as well as know what they should expect from a service provider. Confirming

service performance in relation to standards and expectations is another activity by which customers can perceive value: it is important that service providers communicate to customers that the provision of services is correctly made, as not all customers are able to evaluate service effectiveness, because of their inexperience, service invisibility or technicality. Communication skills of service providers can reassure customers. Clarifying after-sales expectations is a third possible activity: as sellers often promise something that goes beyond customers' expectations, service providers can prevent disappointments, complaints and poor service by clarifying the situation during the conclusion of the contract. Finally, educating customers to avoid peak periods of demand is advantageous for both the customer, who will enjoy faster service, and for the service organisation because it reduces problems related to excess demand. Thus:

*RP2: Customer education is a process including companies' education initiatives.*

Service knowledge, as well as access and intent to use it, is an indispensable factor for any customer who wants to use a service effectively (Yeatts *et al.*, 1992). Jointly integrating different information promotes increased knowledge levels (Peter and Olson, 2002) and thus education of customers (Aubert and Gotteland, 2010). Customer personal experiences and companies' education initiatives are aimed at informing and training customers in relation to goods and services attributes and properties as well as their use, production process, and metatext connected to goods and services purchasing. During such a process, customers increase their knowledge levels to become either novice, informed or expert customers. Hence:

*RP3: Customer education is a process feeding customer's knowledge.*

In particular, at first customers are novice. They (deliberately and unintentionally) achieve news and data, which is a set of qualitative, technical and quantitative notions and aspects. Although such information is devoid of meaning and interpretation (Narduzzo, 2003), customers can acquire by means of them a basic knowledge level (k1) about facts and events relevant or interesting to them. As sources of news and data collection are many and varied, customers can acquire messages in a scattered and fragmented way. For this reason, a customer's knowledge generally is distracting and redundant (Panati and Golinelli, 1991). For instance, if a customer seeks to buy a Persian carpet, its country of origin, the number of knots, and the dyes used are technical attributes useful to compare among products. With respect to a convenience good as pasta, the first level of knowledge lies in its physical characteristics, nutritional properties and ways to cook it, at least according to the simplest recipes. In terms of service, by considering the opera as an example of performing art, customers need of basic information and data such as who, where and when wrote it, the genre it can be considered part of, where and when it has been played, its most famous interpreters, the narrative it contains. Therefore:

*RP4: Novice customers hold a basic knowledge level.*

Novice customers become informed customers by means of an interpretation process of news and data acquired by them. This process involves the cognitive steps of exposition, attention and understanding (Dalli and Romani, 2003). Exposition is the physical and mental skill of receiving information within an environment (Peter and Olson, 2002). As attention is part of the process in which the customer consciously considers certain information (Hawkins *et al.*, 2001), it implies selectivity of information (Lachman *et al.*, 1979) and presupposes that the customer is receptive to information processing (Kahneman, 1973). Understanding is giving a complete meaning to the information gathered by integrating new and existing knowledge (Hawkins *et al.*, 2001): customers conduct an information search by relying on both internal and external sources. Internal sources refer to things that they already know (their knowledge base), whereas external sources of information are those that are available in the marketplace (Su *et al.*, 2008). In other words, information is news and data processed, measured, categorised, filtered and synthesised. As it assumes significance, customers can use information in order to make a decision. Any information has to fully respond to the customer's needs and be immediately used without requiring additional processing (Panati and Golinelli, 1991). According to Burton (2002), customer information is a lower-level activity providing general knowledge (k2). Jointly integrating different information increases knowledge levels (Peter and Olson, 2002; Aubert and Gotteland, 2010). For instance, if customers understand the meaning of a Persian carpet and are able to interpret and decode data and news, they can appreciate it. Understanding how pasta is best eaten, which dressings are best suited, which other course best complete the meal allows customers to examine the effects of pasta consumption on human body and its health. With regards to opera, customers obtain a deeper understanding of it if they gain a comparison with different operas of the same author or the same era, a knowledge of the respective genre and of other genres, the criteria of a good performance. Thus:

*RP5: Informed customers hold a general knowledge level.*

The third customers' knowledge level involves equipping them with the skills and abilities to utilise information (Burton, 2002). In other words, customers are trained to the services delivery and goods purchase process through their learning (Peter and Olson, 2002), which can be direct (individual experience in relation to perceived information and processing of a behavioural reaction) or indirect (imitation of others' behaviour). If customers possess a richer experience base and deeper knowledge level (k3), they become experts. Expert customers differ from novices in the degree, content and organization of their knowledge (Mitchell and Dacin, 1996). Expertise is defined as the customer's ability to be more selective in their information search (Johnson, 1998), able to acquire information in a less structured environment (Brucks, 1985), make discerning choices, resolve problems effectively and seek further information (Ritters, 2003), and process new information in greater depth (e.g. Alba and Hutchinson, 2000; Bell and Eisingerich, 2007). A few consumer studies highlight that

the relationship between customers' experience of the product and knowledge is inverted (Punj and Staelin, 1983; Johnson and Russo, 1984): expert customers can process new information with more knowledge and develop a more critical attitude (e.g., Aubert and Gotteland, 2010), but with increasing knowledge they can ignore information and think that the effort employed is not worthwhile (Moorthy *et al.*, 1997). For instance, if customers know other kinds of carpets in addition to Persian carpets, and also the culture of a carpet, they become experts in the purchase of that product. When customers are able to understand pasta's meaning in the whole socio-cultural context in terms of a number of facts, anecdotes, and stories, their consumption experience is more complete and satisfying. Also, customers feel experts when they holds a full comprehension of the meaning of the opera in past times and in the present time, the position such an opera has in music history, and its impact on music evolution. Hence:

*RP6: Expert customers hold a deep knowledge level.*

### *3.2 Effects of customers education in terms of customer perceived value*

As highlighted in the literature review section, customer education can affect customer perceived value in terms of benefits and outlays.

With specific regard to customer perceived benefits, they include the advantages that the customer achieves through the education process evaluation skills and also a) satisfaction and appreciation, b) perceived risk, c) purchasing power, and d) protection of their rights and interests. Customer education improves decision making under changing situations and provides greater control over personal economic destiny, so it increases personal appreciation and satisfaction (e.g., Oumlil *et al.*, 2000; Shih and Venkatesh, 2004; Aubert, 2008; Aubert and Gotteland, 2010). For example, if service organisations explain to customers the reasons for a certain system of service delivery, as well as how they can benefit from it, customers will better appreciate the service because of this education (Stepanek, 1980). The collection of a lot of information about available alternatives leads customers to reduce their perceived risk. Such risk may be related to the uncertainty that the product meets their expectations, or the conditioning of others (i.e. family or friends) about the purchase choices they made. Several studies (e.g. Beatty and Smith, 1987) have shown that by increasing the perceived risk associated with the product, the customer is looking for much more information. Customers can also benefit from increased purchasing power resulting from more effective buying (Oumlil *et al.*, 2000), and can protect their rights and interests as well as promote social civilisation and progress (Purutcuoglu and Bayraktar, 2004).

Customer perceived outlays concern the disadvantages that customers have identified in obtaining the desired goods and services. Such sacrifices include: a) economic commitment, b) product complexity, c) information accessibility, and d) time employed, cognitive and behavioural effort, and resulting stress. Customer education can require customers in the information search phase to support an economic commitment related,

for example, to fuel costs involved in visits to multiple stores, or costs for the purchase of specialised magazines. In addition to economic effort, product complexity implies more information searching in order to understand attributes and functionalities. Information searching and processing activities increase if a product is new and specific. Further, information accessibility - that is, its availability in the place and in the format desired by customers - affects customer perceived value. Some studies (Bettman *et al.*, 1991; Miyazaki *et al.*, 2000) noted that costs related to information searching and processing are reduced if, *caeteris paribus*, such activities are easily accessible to customers. Accordingly, customers can make decisions more accurately and satisfactorily. Time employed in information searching and processing, cognitive and behavioural effort and the resulting stress from such activities, are sacrifices that customers must generally make.

These observations inspire the following propositions:

*RP7: Customer education will have a positive effect on the customer perceived value.*

*RP8: Customer education will have a negative effect on the customer perceived value.*

### 3.3 Role of customer evaluation skills

Any knowledge level gained by customers during the customer education process improves evaluation skill (Bettman and Sujun, 1987; Narduzzo, 2003). Customers develop evaluation skills based on personal experience and companies' education initiatives not in order to make a choice but rather to evaluate goods and services in terms of their attributes and use. Information improve customer evaluation skills in relation to product quality (Sproles *et al.*, 1980) because over time customers become able to identify and appreciate higher-quality products. In addition, extensiveness more than intensiveness of experience increases the ability to predict the customer's own preferences (Hoeffler *et al.*, 2013). Accordingly, it seems reasonable to argue that expertise level affects customer perception in the after-use phase. "Since expert customers possess a richer knowledge and experience base, they may process new information in greater depth (Alba and Hutchinson, 1987, 2000; Johnson and Russo, 1984; Mason and Bequette, 1998; Rao and Monroe, 1988) and, thus, may feel more confident in assessing technical outcomes and questioning service providers' explanations than do novices when making decisions" (Bell and Eisingerich, 2007, p. 467). Therefore, customer evaluation skills mediate the relationship between customer education and customer perceived value. In this direction, the more customers become expert, the more they are able to: a) use a better vocabulary, with appropriate and specific technical terms; b) understand relevant aspects of a goods or service that they have to evaluate; c) have an ideal reference for how the product should be and can thus make a comparison; d) derive more meaning from a product because they possess more information about it; e) experience a learning process that is pleasant in itself; f) experience an activity that is sense making in nature; g) know better their needs; h) feel they increased their personal growth level in terms of knowledge and are consequently more expert; i) better justify to

themselves the reasons for choosing a product (preference justification); j) increase their curiosity and passion for a product; and k) develop social interactions. In addition, Ritters (2003) acknowledges that while laws and markets may change, customer education skills will enable people to move through life as effective customers. Thus:

*RP9: Customer evaluation skills will affect the relationship between customer education and customer perceived value.*

#### **4. Managerial implications**

Although this study is conceptual in nature, it offers a number of practical implications for managers that want to improve consumer education.

As the complexity of the marketplace grows, the importance of customer education becomes paramount (Halatin and Taylor, 1994). This paper highlights the importance for any company to educate its customers to increase their knowledge and evaluation skills in order to positively affect customer perceived value. Developing initiatives able to increase the customer's knowledge is good right because this way customer evaluation skills enhances and, as a final step, its ability to be satisfied from product consumption - either good or service. In addition, developing initiatives aimed at strengthening customer education allows companies to obtain a number of advantages, for example: a) increasing customer perceived value and, consequently, strengthening company strategies of differentiation from competitors; b) being perceived as a company concerned with their customers' benefits, as it is more open and transparent, thus applying affiliation principles and inspiring more trustworthiness (Eisingerich and Bell, 2008) and social legitimation through offering more information about product attributes, their use and providers, and production processes; c) expert customers speak more and better of the products and company through word-of-mouth and e-word-of-mouth conversations (Brunetti, 2003), and can also become brand advocates; and d) having expert customers allows a company to attract better partners for developing possible co-creation (Vargo and Lusch, 2004, 2008 a,b; Vargo *et al.*, 2008) and collaborative innovation (Verona and Prandelli, 2006) processes and, consequently, to win at a competitive level.

In relation to this last aspect, as customer participation in service production and delivery is increasingly viewed as a source of value creation (Lengnick-Hall, 1996; Prahalad and Ramaswamy, 2000; Bettencourt *et al.*, 2002), companies can effectively educate customers directly by involving them in the material goods production (Prahalad and Ramaswamy, 2003) or service delivery (Bendapudi and Leone, 2003; Meuter *et al.*, 2005). In this way, customers can attain new knowledge and at the same time appreciate and enjoy more of their purchases. Such involvement affects customers at both the cognitive and emotional level. The direct experience makes customers active partners of their purchases, not just passive recipients.



It is also important to consider that any company has to carefully choose the education programmes (e.g., auto-education, mass education, experiential or individual education). According to Aubert and Gotteland's study (2010), any company has to segment them on the base of the initial level of customers' expertise. In addition, "not all customers require similar levels of educational support in the same service context" (Burton, 2002). Therefore, managers need to develop education initiatives mainly aimed at customers that want to satisfy their curiosity and increase their knowledge levels.

The analysis carried out highlights how managers should not only develop a number of education and communication activities but also make a cultural leap in order to educate customers. Despite this, it is not easy to find companies putting in place full and comprehensive education programmes. Easier it is to find single initiatives, however still useful and interesting. For instance, De Cecco, an Italian producer of pasta, found it necessary to disseminate some knowledge about pasta when it started to enter the Russian market.

Providing customers with a number of aspects and tools for evaluating products reduces information asymmetries between a company and its customers (Nayyar, 1990; Bell and Eisingerich, 2007). However, at least in principle, this can reduce the power of the company. Therefore, managers should consider this risk by both creating knowledge about service alternatives - because "the difference in the amount of search or sources of information considered by consumers disappears" (Venkatraman and Dholakia, 1997, p. 313) - and evaluating what information can be offered to customers for increasing their knowledge levels.

Some suggestions in order to implement a customer education program deal with its content, while others with its media. As to the former, one could think of the background of product's concept and design, its raw materials; production processes; final product; actual workers; company; country where production takes place; product usage; meta-text (when involved). As to the latter, companies can deploy several "devices" such as communication (off-line and on-line); brand community; stores; events; customers' direct involvement in the material goods production and service delivery.

## 5. Conclusions, limitations and directions for future research

This study focuses on the effects of customer education in terms of customer perceived value. It especially explores customer education as process feeding a number of knowledge levels, and highlights the relationships between customer education and customer perceived value mediated by customer evaluation skills. It proposes a theoretically grounded conceptual framework that can be considered a first step towards compensating for the lack of studies on customer education in the service marketing and management field.

This study is not without limitations. The methodology is for now based only on some research propositions. The model hasn't been tested and there are no definite results. Consequently, the application to management

remains rather general. In addition, despite the customer education issue is evolving quickly, the theoretical and empirical contributions about this topic within the service marketing and management literature are mostly dated.

This paper would encourage future researchers to explore this area in greater depth. To further this goal, we offer the following suggestions, which coincidentally represent further limitations of this study.

In addition to empirically testing in the future the model presented, it could be interesting to develop, and subsequently test, another model considering both cognitive and emotional dimension of the post-purchase evaluation phase.

Another promising research area is to apply this model to different product categories of (convenience and shopping) goods and (high- and low-contact) services and experiences.

It may also be relevant to consider the contribution offered to customer education initiatives by third parties such as practice communities, and examine if companies in the private and public sector can contribute in different ways to the customer education process, customer evaluation skills and perceived value.

Finally, we suggest more in-depth examination of the situations in which it is appropriate to create expert customers both by providing detailed information about product features and properties, use of products, providers and production processes, and allowing customers to actively participate in education programmes and to feel more involved in the company's activities.

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Angelo Bonfanti  
Federico Brunetti  
Effects of customer  
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customer perceived value:  
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Angelo Bonfanti  
Federico Brunetti  
Effects of customer  
education in terms of  
customer perceived value:  
the role of customer  
evaluation skills

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# The financial unsustainability of the Italian public health care system

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## Abstract

**Purpose of the paper:** Health and sustainability have become an almost indissoluble unity of analysis in all advanced health care systems. We ask the research question if the Italian enduring recession will affect the economic and financial sustainability of Government health financing in the period 2014-2018.

**Methodology:** We have adapted the theoretical framework of economic and financial health care sustainability introduced by the WHO in 2009 to an economy suffering from an enduring recession and stagflation, with data obtained from the Italian Document of Economy and Finance 2011 and 2014 and the International Monetary Fund.

**Findings:** We found that the Document of Economy and Finance 2014: 1) has significantly reduced the fraction of GDP allocated to public health financing (6.98%; 95% CI 6.80-7.21) with respect to the previous Document of Economy and Finance 2011 (6.98%; 95% CI 6.80-7.21) at a confidence level of  $p < 0.05$  with  $t = 4.4285$ ,  $df = 11.978$  and  $p\text{-value} = 0.0008269$ ; 2) has increased the fraction of GDP allocated to non-health financing; 3) has based its spending forecasts on a growing GDP, contrary to all forecasts made by the IMF. Within the analytical framework utilized, this implies that the Italian Government health financing is both economically and financially unsustainable.

**Research limitations:** This approach encounters some limits as the dynamic uncertainty of a socioeconomic downturn and an aging population could induce a complete modification of health care financing from public to a mixture of public and insured private.

**Key words:** sustainability; crisis; financial and economic unsustainability; public health financing; italian health care system

## 1. Introduction: health and sustainability in Italy

Health and sustainability have become an almost indissoluble unity of analysis in all advanced health care systems.

In Italy, from the point of view of health care quality, the World Health Organization (WHO) in the World Health Report 2000 ranked the Italian Health Care System 2nd among 191 countries with respect to the overall health system performance (WHO, 2000, p. 153, Annex Table 1).

Earlier, in 2008, Backman (Backman *et al.*, 2008) analyzed the right to health in 194 nations and, again, Italy ranked among the top performers in terms of health needs recognition, non-discrimination, equity, health



information, health care planning, accessibility to health care and medicines, health workforce education and health monitoring, assessment and accountability.

These achievements have hitherto been financially and economically sustainable, characterized by the large role played by the Government versus out-of-pocket and residual privately insured financing<sup>1</sup>.

The problem is that, in the 3rd trimester of 2014, Italy is one of the few European economies which has not yet recovered from the 2008 economic crisis and is still suffering from a negative GDP growth with the second largest Sovereign Debt in the world after the USA (OECD, 2014) staying at 121% of the GDP (Bank for International Settlements, 2011; IMF, 2011; World Bank, 2014).

The percentage change of the GDP in I-2014 is -0.1% compared with the previous quarter, and -0.5% compared with the same quarter of the previous year (ISTAT, 2014).

In addition, for the sake of a complete picture, Bloomberg (Bloomberg, 2014) ranks Italy as the nation with the 2nd most rapidly aging population, the 5th highest unemployment rate and the 5th worst outlook for EU economies.

Thomson *et al.*, 2009, in their research on Health Care Financing in the European Union, introduced a theoretical framework of the economic and fiscal sustainability of Government health expenditure, which was based on the total differential variation of health expenditure with respect of variation in the GDP (fiscal sustainability) and other Government expenditure (economic sustainability).

This research, however, did not address the effects of a six-year (2008-2014) prolonged recession, in terms of negative GDP growth and positive Government Debt growth, on Government financed health care, such is the case with Italy in 2014.

In this paper, i) we propose an adapted framework for the assessment of the *economic and financial sustainability* of Government health financing in an economy suffering from negative GDP growth; ii) we apply this framework to Italy and iii) we utilize two important public economic and financial planning documents enacted by the Italian Ministry of Finance: the *Documento di Economia e Finanza 2011* (DEF 2011), which outlined for the first time the stability and health care spending review objectives for the period 2011-2014, and the *Documento di Economia e Finanza 2014* (DEF 2014), which addresses the extraordinary measures due to the enduring economic and financial crisis in the period 2014-2018; iv) we ask the research question if, within the assumptions of the adapted framework proposed, the Italian public healthcare financing plan in the period 2014-2018 is economically and financially sustainable.

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<sup>1</sup> Total health expenditure as percent of the GDP is equal to 9.2%, below the OECD average of 9.3%; public expenditure as percent of total expenditure at 77.8%, above the OECD average of 72.2%, and out-of-pocket financing as percent of total expenditure is at 18%, below the OECD average of 19.6% (OECD Health Statistics, 2013).



## 2. The growth of public health financing and the marginal role of private financing in the period 1997-2010

Stefano Olgiati  
Alessandro Danovi  
The financial  
unsustainability of the  
Italian public health  
care system

The Italian Health Care System (FSN) has been reformed in the period 1992-1999<sup>2</sup>, following the full implementation of the law 833/78, after which the Government, through its publicly tax funded<sup>3</sup> Fondo Sanitario Nazionale (FSN), became the central player in providing health care (Cesana, 2005) guaranteeing 99.9% publicly financed universal coverage (OECD, 2013). Not unexpectedly, the Government component of health care financing as percent of the total healthcare financing<sup>4</sup>, has been growing from 70.8% in 1997 to 77.8% in 2011. The uninsured private out-of-pocket component which, though declining, still remains very high and consequently a potential source of social instability in times of pervasive economic recession, has been declining from 26.4% to 18%. The residual health financing remained virtually unchanged, highlighting the residual nature of privately insured health financing in Italy (Olgiati and Danovi, 2012).

Among the goals of the health reform were<sup>5</sup> the containment of rising costs and the improvement of the efficiency of public healthcare provision (Maio and Manzoli 2002; Manzoli *et al.* 2008). However, since the full implementation of the reform in 1997, public health financing has been growing from 5.45% of the Italian GDP in 1997 to 7.45% in 2010.

This combined effect of the growth of public health financing *and* the growth of the GDP in the period 1997-2010 fuelled the growth of the total healthcare financing to a rate of 4.92% in the same period.

In synthesis, during the period 1997-2010, following the reform of the Health Care System, Italy increased both its propensity to spend in health care and the percent of such spending publicly financed. The result is that the growth of public health financing exceeded the growth rate of the GDP by as much as 1.8 times.

As Croft observed in *Exercise and life expectancy* (Croft and Palmer (2012):

“(omissis) through increased daily exercise the risk of mortality can be postponed, but it cannot certainly be eliminated: the benefits of exercise are relative, but unfortunately the risk of mortality is still an absolute.”

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<sup>2</sup> In our research, the base year of the reform, whose successive implementations span from 1992 (D.Lgs.502/92) to 1999 (D.Lgs.229/99), will be considered the year 1997, when in Italy the Region of Lombardia, with the law L.R. 31/97, was the first to fully implement the guidelines of the law 833/78.

<sup>3</sup> The reformed Italian Health Care System (FSN) is funded by direct and indirect taxation. Public funds are pooled centrally and regionally. Centrally pooled funds are allocated to Regional Health Care Systems (FSR) via risk adjusted capitation.

<sup>4</sup> [http://www.oecd.org/document/16/0,3746,en\\_2649\\_37407\\_2085200\\_1\\_1\\_1\\_37407,0\\_0.html](http://www.oecd.org/document/16/0,3746,en_2649_37407_2085200_1_1_1_37407,0_0.html) (accessed 8/18/09)

<sup>5</sup> The Reform of 1992-1999 focused mainly on Hospital Care provision and payment in addition to the introduction of a prospective Diagnosis Related Group (DRGs) public reimbursement system (tariff-based) in substitution of the preceding retrospective reimbursement system (cost-based).

The same holds true for the financial and economic sustainability of universal public health coverage in Italy after 1997; for how long and how much health expenditure could have kept growing at 1.8 times the GDP is a relative notion, but with a difference from the benefits of daily exercise: in public health financing if you run faster you arrive sooner.

Cœteris paribus projections<sup>6</sup> to the year 2025 and 2050 of these trends highlight an increase of the public health burden respectively to circa 11% and 20% of the GDP<sup>7</sup>. This past trend was clearly unsustainable in the light of the depressive Italian GDP long-term growth expectations and of the sovereign debt and deficit containment measures required in all advanced G-20 economies. In addition, the percent of public health financing on total health financing would have reached 85% by the year 2025 and exceeded 92% by the year 2050. It is therefore quite clear that, regardless of any contingency action, a structural financial turnaround of the growth rate of public health financing in Italy was indeed necessary (Olgiati *et al.*, 2012).

### 3. The definition of healthcare economic and financial sustainability of the World Health Organization

The amount of public health spending considered adequate and sustainable for an economy is not an absolute concept but a relative one, which needs to be analyzed within a dynamic framework where the contingent tradeoffs among the financial, economic, social and epidemiological variables determining sustainability must be assessed (Chunling Lu *et al.*, 2010).

The Social Sustainability of a health system pertains the fulfillment of the shared values that the nation holds. In Italy, the Health Reform of 1992-1999 placed the State as guarantor of the equality, solidarity and universal coverage in the provision of health services (Cesana, 2005). There follows that any public policy intervention undermining the constitutional principles of equality, solidarity and universal coverage through the outright reduction of public health services could not be considered socially sustainable in the Country.

The Epidemiological Sustainability of a health system refers to its capacity to meet the global health demands of the population in terms of increasing life expectancy at birth (Kaplan, 2009).

Economic Sustainability must be assessed in strict connection with Social Sustainability. For example, any public policy intervention which aims at reducing public health resources in absolute terms socially *and* economically sustainable, if the resources reduced, are those resources

<sup>6</sup> For an example of the methodology of Financing growth projection see: Chernew *et al.*, 2009. For a more specific analysis of the specific drivers of health Financing see: OECD, 2006.

<sup>7</sup> As a purely indicative term of comparison, total health Financing in percent of GDP is, in the year 2009, 11.6% in Germany and 17.4% in the USA. The percent of public Financing is 76.9% and 47.7% respectively, making the burden of public health Financing 8.9% in Germany and 8.3% in the USA. <http://stats.oecd.org/Index.aspx?DataSetCode=SHA> (accessed 8/18/09)

that are actually *wasted*, i.e. financed and actually expended but *not* utilized efficiently and/or effectively (Pagano and Vittadini, 2004) for a valuable (Porter, 2009) evidence-based (Orszag and Emmanuel, 2010) delivery of care. Therefore, Economic Sustainability acts like a bridge between Financial, Social and Epidemiological Sustainability: it makes savings in financial resources socially sustainable through the improvement in the value of the health services provided.

In the analytical framework of this paper we will utilize a more restricted definition of Sustainability, based on the World Health Organization's (Thomson *et al.*, 2009) definition of Economic and Financial Sustainability<sup>8</sup>:

- a) economic sustainability specifically refers to growth in public health financing as a proportion of gross domestic product (GDP). Financing on health is sustainable up to the point at which the social cost of health financing exceeds the value produced by that financing. If health financing sufficiently threatens other valued areas of economic activity, health financing may come to be seen as economically unsustainable. In order to exemplify, every Euro spent on health care represents one fewer Euro spent on education, national defense, housing, and subsidies. The more we spend on health care, the less we are able to spend elsewhere (Thomson *et al.*, 2009).
- b) the financial sustainability of a health system relates specifically to public financing on health care. A health care system may be economically sustainable and yet financially unsustainable if internal public revenue is not sufficient to meet public financing (Thomson *et al.*, 2009).

#### 4. The theoretical framework of the sustainability of public health financing in relation to the research question

From a theoretical perspective, this paper is an analysis of the Italian Fiscal and Structural Policies on health care, and of their stability and sustainability in the face of the endogenous response to exogenous economic shocks<sup>9</sup>. We refer to the key variables proposed by Coady (Coady *et al.*, 2012) in their study of the economics of public health care reform in advanced economies, in particular to the relationship between Public Spending, Economic and Financial Sustainability, the Health Spending Trend and Budget Caps imposed by Fiscal Consolidation Measures in the EU.

From a wider perspective, this paper is an analysis of the links between Government Accounts and National Income and Production Accounts within the International Monetary Fund's System of National Accounts SNA 1993 (International Monetary Fund, 1993) adopted by the Italian Treasury for the definition of the *Documento di Economia e Finanza 2014* (DEF 2014).

In formal terms, if  $Y$  is the nominal GDP and  $P$  is the total public non-

<sup>8</sup> The term actually used by Thomson *et al.*, (2009) is Economic Sustainability, but in the present model we have divided the original meaning into Financial and Economic Sustainability, where, for the purpose of the present paper, the former conforms the best to the original definition.

<sup>9</sup> Other exogenous shocks such as the affordability of Gilead's Sovaldi™ (Sofosbuvir) for the Treatment of Chronic Hepatitis C or the Ebola outbreak have not been considered.

health financing, the fraction of the GDP allocated to public health financing is a function of  $Y$  (Financial Sustainability) and  $P$  (Economic Sustainability) at time  $t$ , subject to the constraint that  $hY+P$  is lower than the maximum total fiscal revenues  $T$  plus a pre-defined level of deficit  $d$ , defined by the EU Fiscal Policy (European Central Bank, 2014).

Equation 1: Economic and Financial Sustainability

$$h = f(Y, P, t) \\ s.t. \quad hY + P \leq T + d$$

In Italy, within this financial and economic sustainability framework, we would expect public healthcare financing to be:

- 1) *financially unsustainable*: GDP growth is below expectations and fiscal revenues and the maximum deficit cannot be raised due to Excessive Deficit Procedures (European Central Bank, 2014);
- 2) *economically unsustainable*: a reallocation of public financing towards those social needs which are more urgent becomes a priority, and the fraction of GDP allocated to public health will have to be reduced.

In synthesis, we will test the null hypothesis  $H^0$  that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance does not change over time:

Equation 2: Null Hypothesis  $H^0$

$$H^0: \frac{dh}{dt} = \frac{\partial h}{\partial Y} \frac{dY}{dt} + \frac{\partial h}{\partial P} \frac{dP}{dt} = 0$$

If the null hypothesis  $H^0$  is rejected, we will generate the alternative hypothesis that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance changes over time:

Equation 3: Alternative Hypothesis  $H^1$

$$H^1: \frac{dh}{dt} = \frac{\partial h}{\partial Y} \frac{dY}{dt} + \frac{\partial h}{\partial P} \frac{dP}{dt} \neq 0$$

In particular, we will see that *Documento di Economia e Finanza 2014* has, from a statistical point of view, significantly reduced the fraction of GDP allocated to public health financing with respect to the *Documento di Economia e Finanza 2011* but it has increased the fraction of GDP allocated to non-health financing. In this regard, public health financing has become unsustainable, because alternative spending has become a priority.

We will also see that, on the contrary, the projected GDP is not decreasing in the period 2014-18. Within the analytical framework

utilized, this implies that the Ministry of Finance is not expecting a situation of Financial Unsustainability.

It is clear that if the expectations of a growing GDP are not met, public financing will become also Financially Unsustainable.

Stefano Olgiati  
Alessandro Danovi  
The financial  
unsustainability of the  
Italian public health  
care system

## 5. Methods, data sources and reproducibility of the research

Given the health policy implications of some of the findings, we decided to make the raw data and the analytic codes available for other researchers at the public repository: [https://github.com/SAO65/DEF\\_2014](https://github.com/SAO65/DEF_2014).

Raw data have been copy-pasted from the Documento di Economia e Finanza 2011, § III.3 SANITA' of Sezione II: Analisi e Tendenze della Finanza Pubblica and § IV.3 LA SPESA SANITARIA of Sezione II: Nota Metodologica (Allegato) (DEF 2011) and the Documento di Economia e Finanza 2014, Sezione II: Analisi e Tendenze della Finanza Pubblica and III.3 SANITÀ (DEF 2014) available at the URL <http://www.mef.gov.it/doc-finanza-pubblica/def/> into the data.csv file ([https://github.com/SAO65/DEF\\_2014/blob/master/data.csv](https://github.com/SAO65/DEF_2014/blob/master/data.csv)). We have not automated the download of the data because we have decided to analyze the documents as is, with the data represented in the document itself when the document was finalized and published by the Ministry of Finance. The National Institute of Statistics, ISTAT, periodically updates actual and prospective data and modifies some of the accounting standards. Because of this manual passage, this research does not qualify as fully reproducible (R), but the analytic codes and the findings are reproducible (C) (Peng, 2009).

The code file is at the public repository: [https://github.com/SAO65/DEF\\_2014/blob/master/DEF\\_2014.Rmd](https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd)

We have utilized R knitr literate statistical program version 3.1.0 and the ggplot2 package.

## 6. An analysis of the Italian Stability and National Reform Program of the Documento di Economia e Finanza 2011 and 2014

The DEF 2011 reports actual data for the year 2010 and a budget for 2011-2014; the DEF 2014 reports actual data for 2010-2013 and a budget for 2014-2018.

A preliminary analysis of Tab. 1 clearly reveals that one of the most striking and immediate characteristics of the Italian public financial planning, both in the DEF 2011 and 2014, is the systematic overestimation of the expected GDP versus the actual one:

- a) the DEF 2011 registered an actual GDP of 1,548,816 m€ in 2010 and predicted an expected GDP of 1,671,939 m€ (sd 69,717) in the period 2011-2014;
- b) the DEF 2014 registered an average actual GDP of 1,564,692 m€ (sd 11,879) in the period 2010-2013 - lower than the expected GDP of the DEF 2011 - still it predicted an expected GDP of 1,682,060 m€ (sd 80,511) in the period 2014-2018 - higher than the expected of the DEF 2011.

Such systematic failure to achieve the target GDP (Financial Unsustainability) is paired by the systematic policy of increasing both actual and expected Public Non-Health Financing and decreasing Public Health Financing (Economic Unsustainability) (See Tab. 1).

This unsustainability is clearly result of the enduring financial and economic crisis which, on one hand, reduces the available resources and, on the other hand, obliges the Ministry of Finance to reallocate public expenditure towards those social needs which are more urgent, such as extraordinary unemployment relief funds (Cassa Integrazione), pension benefits and the payment of interest on Sovereign Debt.

*Tab. 1: Gross Domestic Product and Public Non-Health Expenditure in DEF 2011 and DEF 2014*

Description	Document	Period	Status	Mean	Standard Deviation
Gross Domestic Product	def2011	2010	actual	1,548,816	NA
		2011-13	budget	1,671,939	69,717
	def2014	2010-13	actual	1,564,692	11,879
		2014-18	budget	1,682,060	80,511
Public Non-Health Expenditure	def2011	2010	actual	680,056	NA
		2011-13	budget	707,842	21,010
	def2014	2010-13	actual	686,326	4,928
		2014-18	budget	712,879	12,841
Public Health Expenditure	def2011	2010	actual	113,457	NA
		2011-13	budget	120,210	5,167
	def2014	2010-13	actual	110,621	1,499
		2014-18	budget	116,264	3,901

Legenda: DEF 2011 - Documento di Economia e Finanza 2011

DEF 2014 - Documento di Economia e Finanza 2014

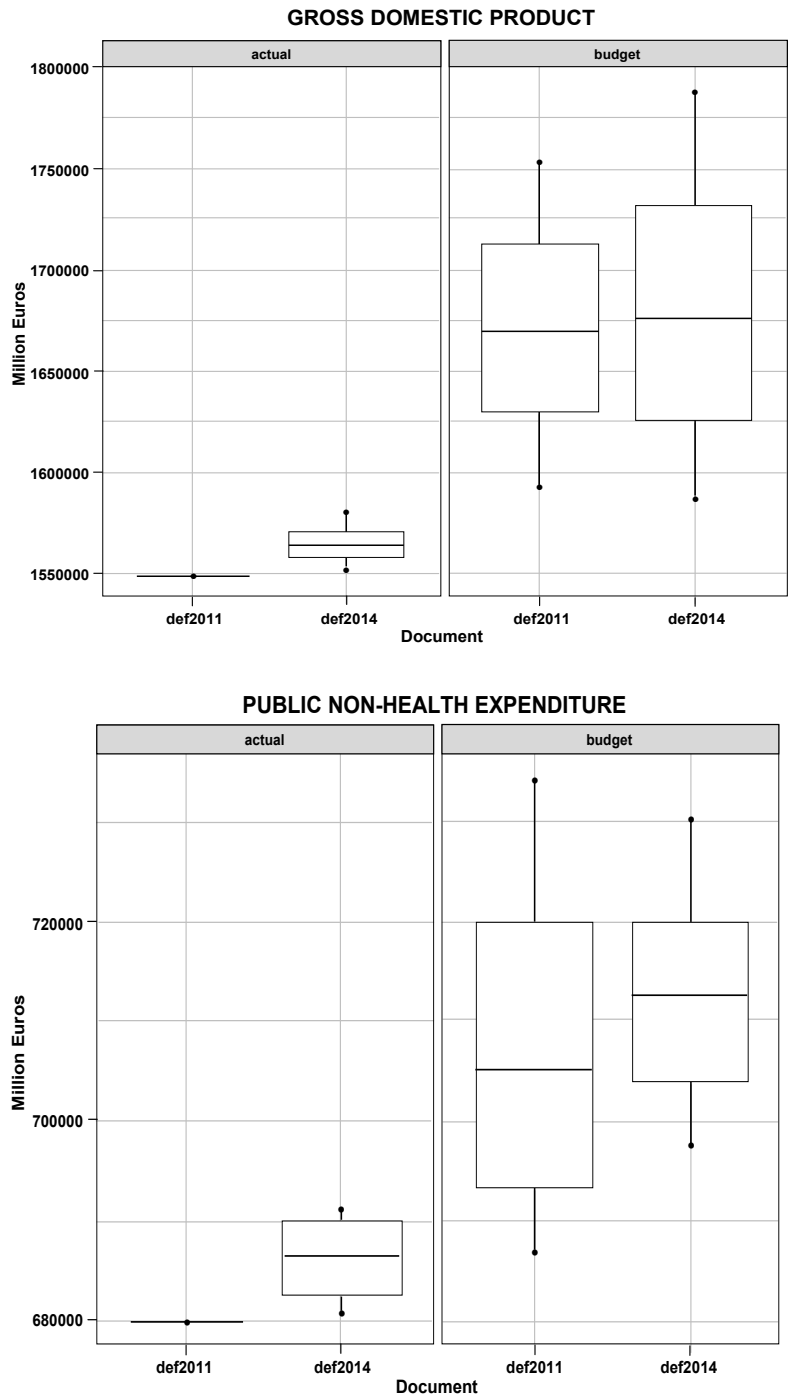
Reproducible Codes: [https://github.com/SAO65/DEF\\_2014/blob/master/DEF\\_2014.Rmd](https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd)

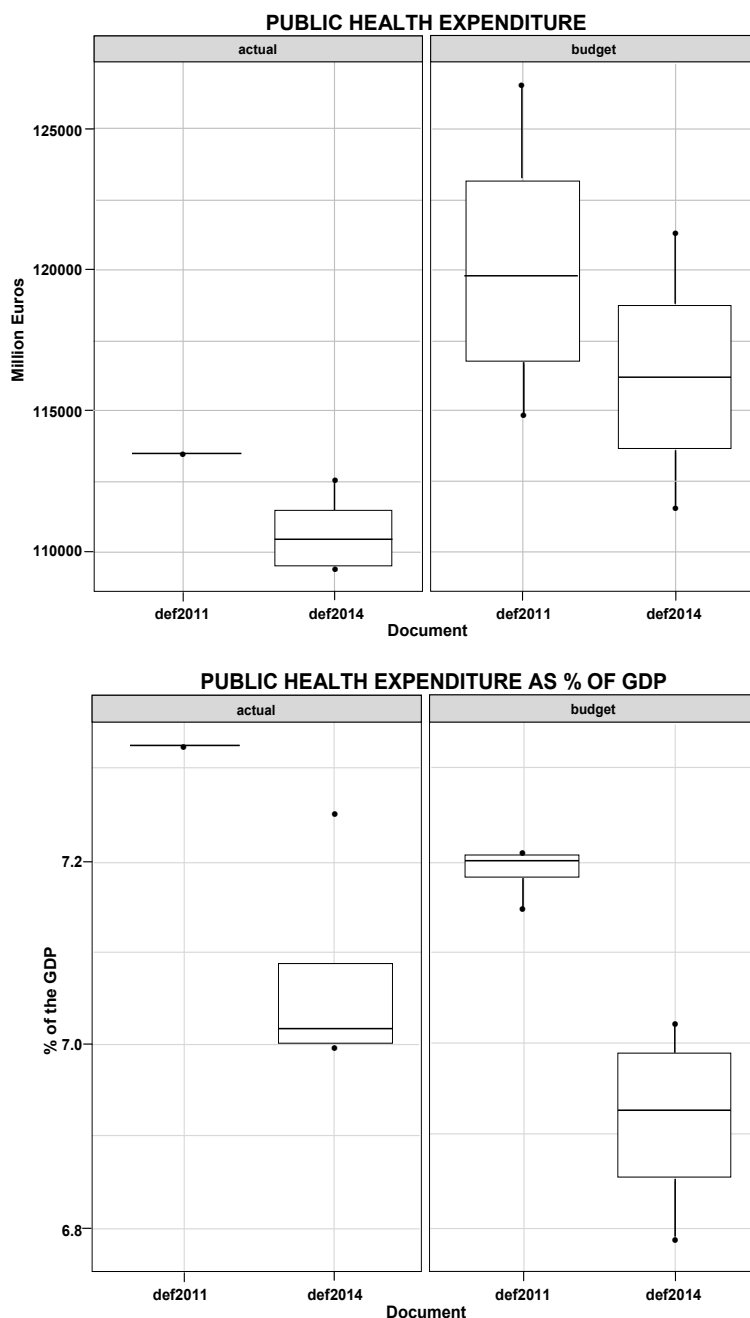
Source: DEF, 2011; DEF, 2014

The combined effect of these variables can be appreciated in Figure 1. Public health expenditure as percent of the GDP has been reduced from the actual 7.33% in 2010 to an average of 7.19% (sd 0.03) in the period 2011-2013, and will be further reduced to 6.92% (sd 0.1) in the period 2014-2018.

Fig. 1: GDP, Public Non-Health Expenditure, Public Health Expenditure and Public Health Expenditure as % of GDP in DEF 2011 and DEF 2014

Stefano Olgiati  
Alessandro Danovi  
The financial  
unsustainability of the  
Italian public health  
care system





Legenda: DEF 2011 - Documento di Economia e Finanza 2011  
DEF 2014 - Documento di Economia e Finanza 2014  
GUI: R version 3.1.0  
Reproducible Codes: [https://github.com/SAO65/DEF\\_2014/blob/master/DEF\\_2014.Rmd](https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd)

Source: DEF, 2011; DEF, 2014



In addition, in mid-2014, as this paper is being written, the optimism (or hope) of the Ministry of Finance remains untamed even in the face of the Italian National Institute of Statistics reports (ISTAT) which, on May 14, 2014, published the Preliminary Estimates of the GDP, which we report in full:

Stefano Olgiati  
Alessandro Danovi  
The financial  
unsustainability of the  
Italian public health  
care system

“In the first quarter of 2014 the seasonally and calendar adjusted, chained volume measure of Gross Domestic Product (GDP) decreased by 0.1 per cent with respect to the fourth quarter of 2013 and by 0.5 per cent in comparison with the first quarter of 2013” (ISTAT, 2014)

It is clear that if the expected GDP in the period 2014-2018 is below expectations, and the Ministry of Finance is not able or willing to reduce non-health financing, it will be forced to further reduce health expenditure to maintain unvaried the fraction of GDP allocated to health financing.

This situation will render the public component of the Italian Healthcare System unsustainable.

## 7. Robustness

We have utilized a Welch Two Sample t-test of the unpaired samples of public health financing as a fraction of the GDP to test the null hypothesis  $H_0$  (Tab. 2).

We reject the null hypothesis that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance does not change over time at a confidence level of  $p < 0.05$ , with  $t = 4.4285$ ,  $df = 11.978$  and  $p\text{-value} = 0.0008269$ .

We generate the alternative hypothesis that the true difference in the means of the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance is not equal to 0 at the 95 percent confidence interval 0.118 - 0.347.

Tab. 2: Comparison and 95% Confidence Intervals for public health and non-health financing as percent of the GDP in DEF 2011 and DEF 2014

Description	Document	Period	Mean	95% Confidence Interval	
Public Health Financing as % of the GDP	def2011	2010-13	7.22	7.15	7.31
	def2014	2010-18	6.98	6.80	7.21

Legenda: DEF 2011 - Documento di Economia e Finanza 2011

DEF 2014 - Documento di Economia e Finanza 2014

Reproducible Codes: : [https://github.com/SAO65/DEF\\_2014/blob/master/DEF\\_2014.Rmd](https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd)

Source: DEF, 2011; DEF, 2014

## 8. Conclusions

Among public health policy researchers worldwide the difficulties in the ongoing implementation of the Affordable Care Act in the USA, coupled with the economic recession in some EU countries, rises concerns on the sustainability and the role of Government financing in securing some of the most important achievements, such as universal coverage, in the most advanced health care systems in the world.

In the year 2000, the Italian Health Care System ranked 2nd among 191 countries with respect to the overall health system performance, health needs recognition, non-discrimination, equity, health information, healthcare planning, accessibility to healthcare and medicines, health workforce education and health monitoring, assessment and accountability. These achievements have been hitherto financially and economically sustainable, but characterized by the large role played by Government versus out-of-pocket and privately insured financing.

This paper argues that the public financing component of the Italian Healthcare System has become financially and economically unsustainable for four reasons:

- 1) the first reason is that, in the period 1997-2010, following the reform of the Health Care System, Italy has increased both its propensity to spend in health care and the percent of such spending publicly financed. The result is that the growth of public health financing has exceeded the growth rate of the GDP by as much as 1.8 times in the same period;
- 2) the second reason is that, in the second trimester of 2014, Italy is one of the few European economies which has not recovered yet from the 2008 economic crisis and is still suffering from a negative GDP growth, with the second largest Sovereign Debt in the world after the USA (OECD, 2014). The percentage change of the GDP in I-2014 is -0.1% compared with the previous quarter, and -0.5% compared with the same quarter of the previous year (ISTAT, 2014);
- 3) the third reason is that Italian national financial plans of the *Documento di Economia e Finanza 2011* and *2014* are characterized by a striking overestimation of the expected GDP versus the actual one: the DEF 2011 registered an actual GDP of 1,548,816 m€ in 2010 and predicted an expected GDP of 1,671,939 m€ (sd 69,717) in the period 2011-2014; the DEF 2014 registered an average actual GDP of 1,564,692 m€ (sd 11,879) in the period 2010-2013 - lower than the expected GDP of the DEF 2011 - still it predicted an expected GDP of 1,682,060 m€ (sd 80,511) in the period 2014-2018 - *higher* than the expected of the DEF 2011;
- 4) the fourth reason is that such systematic failure to achieve the target GDP is paired by the systematic policy of increasing Public Non-Health Financing and decreasing Public Health Financing. Public health expenditure as percent of the GDP has been reduced from the actual 7.33% in 2010 to an average of 7.19% (sd 0.03) in the period 2011-2013, and will be further reduced to 6.92% (sd 0.1) in the period 2014-2018.

This unsustainability is clearly result of the enduring financial and economic crisis which, on one hand, reduces the available resources and, on the other hand, obliges the Ministry of Finance to reallocate public expenditure towards those social needs which are more urgent, such as extraordinary unemployment relief funds (*Cassa Integrazione*), pension benefits and the payment of interest on Sovereign Debt.

It is clear that if the expected GDP in the period 2014-2018 is below expectations, and the Ministry of Finance is not able or willing to reduce non-health financing, he will be forced to further reduce health expenditure to maintain unvaried the fraction of GDP allocated to health financing. This situation will render the public component of the Italian Healthcare System unsustainable.

In this context, *improving the sustainability* of the Italian healthcare system is presently evoked by policymakers as a justification for cutbacks on health expenditure and the reallocation of financial resources to other sectors. This paper proposes an analytical framework of economic and financial sustainability with the purpose of introducing a rational approach which should act as a guarantee of a socioeconomic and epidemiological effort towards an integrated approach to health planning (Gruen *et al.*, 2008).

## 9. Discussion

This approach to economic and financial sustainability of public health care financing encounters some limits when the dynamic uncertainty of a socioeconomic downturn and an aging population (Tamiya, 2011), such as Italy is experiencing in 2014, could induce a complete modification of the model of health care financing from public to a mixture of public and insured private, such as the Affordable Care Act in the USA. However, we believe that at the moment in Italy, given the marginal role of insured health coverage (4.2%) and the high proportion of out-of-pocket spending (18%) (OECD, 2013), such reduction in public financing could have the effect of increasing out-of-pocket health financing which, in times of crisis, could render health coverage, universal only in principle, with adverse epidemiological consequences for the old (Kenneally and Walshe, 2012) and less well-to-do households (Shibuya, 2011).

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# The impact of logistics solutions on customer satisfaction: an exploratory qualitative study of manufacturing companies

Andrea Chiarini - Alex Douglas

## Abstract

**Purpose of the paper:** *The main purpose of this paper is to expand the debate concerning the different logistics solutions implemented in order to increase customer satisfaction.*

**Methodology:** *This research utilises a multi-case study approach conducted within 12 medium- and large-sized Italian manufacturing companies and the interviews of 16 managers. The interview questions were based on key issues derived from the extant literature.*

**Findings:** *Analysing and coding the answers of the managers led to the identification of five theoretical categories of logistics solutions to increase customer satisfaction. Categories such as 'Supplier with innovative logistics knowledge and skills', 'Green logistics solutions' and 'Lean and agile solutions' were deemed the most important with regards to impact on satisfaction, whereas 'Reverse logistics solutions' and 'Sharing ICT and logistics performance measurement system' were considered less important.*

**Research limitations:** *The limitations of this research are mainly linked to the use of a small sample of companies and a qualitative inductive inquiry which has led to more exploratory than validated results.*

**Implications:** *Based on the reported results, practitioners who want to implement logistics solutions in manufacturing companies can now choose solutions that will best impact customer satisfaction. For academics the challenge is to further validate the theoretical categories that emerged from this research as hypotheses.*

**Originality/value of the paper:** *This paper brings to light original and valuable findings related to the priorities of logistics solutions for customer satisfaction showing unexpected results in terms of impact ranking.*

*Key words: logistics solutions; customer satisfaction; manufacturing companies; qualitative research*

## 1. Introduction

Over the years customer satisfaction has dramatically changed in terms of the customers' requirements from the suppliers. Customers have gradually moved from a product-dominant logic to a service-dominant logic (Flint *et al.*, 2011).

In the past customer satisfaction was more focused on requirements such as quality and reliability reducing costs of poor quality (Griffin *et al.*, 1995).

However, the conformance quality of products is just one dimension of customer satisfaction and companies have learnt that customer

requirements are bound to other factors such as shipment, delivery and packaging. In response, over time, companies have down-streamed customer satisfaction requirements through their production and logistics processes including the external supply chain. Management systems and principles related to *agile and leanness*<sup>1</sup> have affected more and more production and logistics solutions because of their connections with customer satisfaction (Khurana and Sohal, 2011).

Indeed, customer satisfaction, from a logistic point of view, can be defined as the right product, at the right price, in the right place, in the right condition, at the right quality and at the right time (Lai and Cheng, 2009).

Manufacturing companies which supply to other companies, with no direct relationships with consumers, are affected by similar principles and for them the downstreaming of customer satisfaction to production and logistics processes is also important. For instance, on-time delivery is fundamental for customers and it requires suppliers to reengineer both internal and external logistics processes, including their supply-chain management. Furthermore, other requirements that are sometimes not considered to be as important as the product, such as packaging and transportation, can affect customer satisfaction. Logistics requirements can also have an impact on environmental management and green processes (Sbihi and Eglese, 2010; Genchev *et al.*, 2011).

The aim of this paper is to enlarge the debate concerning the different logistics solutions implemented by manufacturing suppliers to increase customer satisfaction and to determine their impact on it. In particular this research, by means of semi-structured interviews, aims to identify and propose new links between logistics solutions theory and customer satisfaction. The semi-structured interviews involved 12 large Italian manufacturing companies from different sectors. Their 16 supply chain and logistics senior managers were interviewed to identify their understanding of what they believed to be important within their suppliers in order for them to be satisfied customers.

## 2. Literature review

There are many papers concerning customer satisfaction and how companies can improve processes from marketing to shipping in order to increase customer satisfaction. Nowadays it is taken for granted that customer satisfaction has many aspects and is not just linked to the quality of the product (Kristianto *et al.*, 2012; Meybodi, 2015). In particular, it has been ascertained that a logistics dimension is important in customer satisfaction. Lai and Cheng (2009, p. 111), for instance, reported that customer satisfaction is linked:

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<sup>1</sup> Lean is a production system which enables the reduction of waste and product lead-time. Agile is often used in connection with lean to emphasise the ability of an organisation to respond rapidly to changes in demand in terms of volume and time.



*to the ability to deliver the right amount of right product, at the right place, at the right time, in the right condition with the right information.*

Andrea Chiarini  
Alex Douglas  
The impact of logistics  
solutions on customer  
satisfaction: an  
exploratory qualitative  
study of manufacturing  
companies

For the scope of this paper, only papers concerning logistics solutions for the manufacturing industry and customer satisfaction have been taken into account.

From the 1990s some authors demonstrated a positive relationship between customer satisfaction requirements and delivery performances and logistics solutions (Sharma *et al.*, 1995; Choi and Eboch, 1998; Beamon, 1999; Cermak *et al.*, 2011). Cermak *et al.* (2011) even discussed the fact that customers can participate in the specification and delivery of the services. In this sense, suppliers have to quickly react to customer's demand increasing their abilities of mastering all the processes including the logistics ones.

Logistics has been described as being important for integrating the internal operations of an organisation with the supply chain processes to increase customer satisfaction. For instance, Bowersox *et al.* (2002) investigated all the supply management processes which can affect logistics and customer satisfaction and reported that a logistical value proposition and logistics have a big impact on customer satisfaction leveraging on order processing, inventory management, transportation, handling and packaging, as well as facility network design.

Stank *et al.* (2003) investigated the relationships between customer satisfaction, customer loyalty, market share and logistics service performance. The research did not investigate specific tools or principles relating to the three dimensions.

Zhang *et al.* (2005) demonstrated by means of a quantitative inquiry carried out in US manufacturing organisations that logistics flexibility is a fundamental requirement for responding to changing customer needs. Flexible competence and flexible capability are critical to customer satisfaction and according to their results they have to be combined. However, in their paper the authors do not intentionally investigate what the main logistics solutions are for improving customer satisfaction.

Lun *et al.* (2015) analysed and highlighted how flexibility for the supplier is mainly a matter of acquiring the right skills and the organisational capability in order to follow better the evolution of customer's requests.

Bienstock *et al.* (2008) focused on the use of particular information technology tools which can better link a company's processes with its customers' ones, sharing also outcome performances. According to Bienstock *et al.* (2008, p. 205):

*Information technology can have significant effects on logistics operations, facilitating collaboration among supply chain partners, as well as allowing the automation of many routine logistics activities.*

Interestingly, Bienstock *et al.* (2008) measured customers' perception of logistics quality service performance from their suppliers. This research identified that some logistics issues are important for customer satisfaction. In particular, (Bienstock, 2008, p. 212) were identified the ability to understand customers' business situations, the effectiveness and ease of use

of product ordering procedures, the availability and accuracy of order information, the ability of suppliers to handle order discrepancies, the availability of products in suppliers' inventories to fulfil orders, the timeliness of product delivery and the condition of products ordered (i.e., in terms of damage).

And in terms of performance, according to Gunasekaran *et al.* (2004), the measurement of supplier's performance has a relevant effect on the possibility of increasing customer satisfaction. A particular framework of indicators allows suppliers to control and improve performances such as delivery, quality and service in general. Gunasekaran *et al.* (2004) highlighted the importance of measuring performance in an automatic way by means of ICT solutions. Similar conclusions can be founded also in Gunasekaran *et al.* (2001), Tracey and Leng Tan (2001) and Khan *et al.* (2012).

Vona (2011) investigated logistic districts highlighting that to meet more challenging goals, companies have to reinvent their logistic processes and choose the best outsourcers for logistic activities. According to Vona (2011) in order for a company to satisfy its customers better, with particular reference to delivery times, it has to choose the best outsourcers and integrate them into its processes.

Del Baldo (2011) came to similar conclusions dealing with the integration between carriers, information technology firms and manufacturing companies. Apparently perfect control over the entire network makes a difference in terms of the levels of performance achieved.

A particular group of logistics solutions for increasing customer satisfaction deserves specific discussion. These solutions, classified as *green logistics*<sup>2</sup>, are related to solutions which take into account environmental and social factors (Murphy *et al.*, 1996; Murphy and Poist, 2000; Dekker *et al.*, 2012; McKinnon *et al.*, 2012; Chiarini, 2014). According to Sbihi and Eglese (2007, p. 99):

*Green Logistics activities include measuring the environmental impact of different distribution strategies, reducing the energy usage in logistics activities, reducing waste and managing its treatment.*

In this particular group, reverse logistics is considered one of the most important solutions. Reverse logistics concerns companies specifically when products have to be recovered for quality problems as well as when they are at their end-of-life state (Fleischmann *et al.*, 2000; Rogers and Tibben-Lembke, 2001).

In summary, from the literature review it can be claimed that customer satisfaction is positively affected by logistics solutions. The state-of-the-art concerning this topic shows how customer satisfaction is mainly affected by six issues. Warehouse and inventory management, including handling and packaging solutions can surely affect customer satisfaction (Sharma *et al.*, 1995; Choi and Eboch, 1998; Beamon, 1999); according to the literature review, fundamentally because they can increase in some

<sup>2</sup> Green logistics became a catchword firstly in the transportation industry in the 1980s. It grew out of the growing awareness of environmental problems.

ways delivery performances and product integrity (Sharma *et al.*, 1995; Vona, 2011). The control and integration of the supply chain into the company's operation is another way of increasing customer satisfaction. Once more, this is due to the possibility of improving delivery performances. Moreover, in terms of control and better managing the product in its different production stages, also ICT processes can contribute. (Gunasekaran *et al.*, 2004; Bienstock *et al.*, 2008). By the same token, according to the literature review, KPIs control and measurement can be considered as an important part of ICT solutions.

Lastly, green logistic solutions have increased customers' attention over time. According to the results of the literature review, through these particular green solutions the supplier can help the customer to better respect the compliance to environmental laws and regulations. Noteworthy how all these issues, once mastered by the supplier, can improve the supplier's skills, increasing customer satisfaction.

However, in the literature, there is a lack of understanding of what these solutions are, in what way and to what degree they interact with customer satisfaction. In particular there is no trace of quantitative inquiries which can demonstrate the relative importance of these issues to customers.

Anyhow, from the literature review some specific theoretical key issues have emerged. Each key issue has been linked with the main literature according to the following list.

$K_1$ : customer satisfaction is affected by warehouse and inventory management solutions (Sharma *et al.*, 1995; Beamon, 1999; Bowersox *et al.*, 2002; Sbihi and Eglese, 2010; Genchev *et al.*, 2011)

$K_2$ : customer satisfaction is affected by the control and integration of the supply chain into the company's operations (Bowersox *et al.*, 2002; Cermak *et al.* 2011; Del Baldo, 2011; Vona, 2011)

$K_3$ : customer satisfaction is affected by the sharing and managing of common Information Communication Technology (ICT) processes (Gunasekaran *et al.*, 2004; Bienstock *et al.*, 2008)

$K_4$ : customer satisfaction is affected by the sharing and managing of common key performance indicators (KPIs) and performance data (Gunasekaran *et al.*, 2001; Tracey and Leng Tan, 2001; Gunasekaran *et al.*, 2004; Khan *et al.*, 2012)

$K_5$ : customer satisfaction is affected by the mastery of knowledge and skills linked to logistics from the supplier (Zhang *et al.*, 2005; Cermak *et al.* 2011; Lun *et al.*, 2015)

$K_6$ : customer satisfaction is affected by the green logistics solutions adopted by the supplier (Fleischmann *et al.*, 2000; Rogers and Tibben-Lembke, 2001; Sbihi and Eglese, 2007)

These key issues have been transformed into eight open questions for the design of the semi-structured interview guide described in the following section.

### 3. Methodology

This research has been carried out with 12 medium and large-sized manufacturing companies that have their headquarters in Italy. For each company the supply chain senior manager was interviewed. In 4 companies out of 12, the supply chain managers work side-by-side with the logistics managers. Therefore these latter too were interviewed; ultimately 16 managers were interviewed. The sample of 12 companies was chosen based on the selection criteria given below:

1. must be medium or large-sized global enterprises. In this way they can better control the supply chain because of their contractual power, especially over small- to medium-sized enterprises;
2. must be very committed to the development of their supply chain and sharing knowledge linked to logistics improvements, such as lean and agile systems, specific software and electronic systems;
3. must measure supplier performance through similar indicators. Shared indicators include on-time delivery, products damaged and packaging compliance;
4. must be committed to the development of their supply chain from a sustainability and green point of view.

The companies have been suggested by two Italian consulting firms specialised in operations management. They have been doing consultancy in these companies for many years helping them to increase customer satisfaction and improve logistics processes. Table 1 below summarises the kinds of products these companies manufacture.

*Tab. 1: The companies and their products*

Company	Product
1	Filters for cars and lorries
2	Air compressors
3	Automatic machines for building industry
4	Oil pumps
5	Automotive components
6	Electric engines
7	Oil pumps
8	Hot water eaters
9	Diesel engines
10	Process cranes
11	Motorcycles
12	Motorcycle components

Source: our research

Because all the companies were based in Italy, it was also important that factors such as local laws and regulations should not influence the process of choosing logistics solutions.

The 12 companies represent a multi-case study and the research was carried out in an inductive and qualitative way by means of interviews (Orlikowski and Baroudi, 1991; Flyvbjerg, 2006).

Data collection was via semi-structured interviews. An interviewer guide was developed before interviewing the supply managers. For each company a supply manager was interviewed. In order to gather more data 4 other managers involved in logistics processes were interviewed too, for a total of 16 senior managers.

Table 2 shows the open questions used for the interview.

*Tab. 2: Open questions used for the interview*

Interview focus: What are the best logistics solutions for improving customer satisfaction?		
Id	Open questions	Notes
1	What are the warehouse and inventory management solutions implemented by your suppliers which can affect your customer satisfaction?	Discuss logistics solutions linked just to physical products
2	What are the handling and packaging solutions implemented by your suppliers which can affect your customer satisfaction?	Discuss solutions related to transportation, protection and ease of handling products
3	Can the integration and control of the supply chain of your suppliers in its operations affect your satisfaction in some ways?	Investigate how the integration can increase performances linked to customer satisfaction
4	Does sharing and managing common information technology processes affect your satisfaction in some ways?	Discuss only the information technology integration concerning logistics data and information
5	Does sharing and managing common indicators and performance data affect your satisfaction in some ways?	Discussion only about sharing indicators and data linked to logistics performance
6	Does the mastery of logistics knowledge and skills from your suppliers affect your satisfaction in some ways?	Investigate about the logistics knowledge and skills needed by the customer from the supplier
7	What are the green logistics solutions implemented by your suppliers which can affect your customer satisfaction?	Investigate about green initiatives such as packaging recycling, less polluting transportations, etc.
8	What are the reverse logistics solutions implemented by your suppliers which can affect your customer satisfaction?	Investigate all the reverse solutions during the life of the product and also at the end-of-life state

Source: our research

The open questions are linked to the six key issues which emerged from the literature review. In particular the first and the sixth key issue have been brought into two open questions in order to better focus on complex issues such as inventory and warehouse management solutions and green logistics.

The interviews produced a lot of qualitative data. To facilitate analysis the NVivo® 10 software package was used and the data was coded and labelled in order to classify and assign meaning to parts of the information (Lofland and Lofland, 1995; Bazeley and Jackson, 2013).

At the end of the process, five theoretical categories were used to represent the logistics solutions which improved customer satisfaction according to the responses of the 16 senior managers. Table 3 in the following section summarises the coding results.

#### **4. Discussion**

As a first general result from the coding activity can be noticed (Table 3) that just five theoretical categories emerged from this inductive inquiry process. Comparing these categories with the eight key issues derived from the literature review a reduction in number can be observed. Table 3 presents the five theoretical categories in the last column, while in the central column named *Initial coding*, can be found the single logistics solutions within the five categories. In fact, in the central column only the codes, or logistics solutions, proposed by the respondents that have more than nine concordant respondents have been taken into account. For each theoretical category, the average of the number of concordant respondents to the solutions has been calculated. These average values have been displayed in the radar-chart of Figure 1, showing that 'Supplier with Innovative logistics knowledge and skills' is considered the most important category which affects customer satisfaction (average 15.5); on the other hand, 'Sharing ICT and logistics performance measurement system', with an average value of 9, is considered the least important for customer satisfaction.

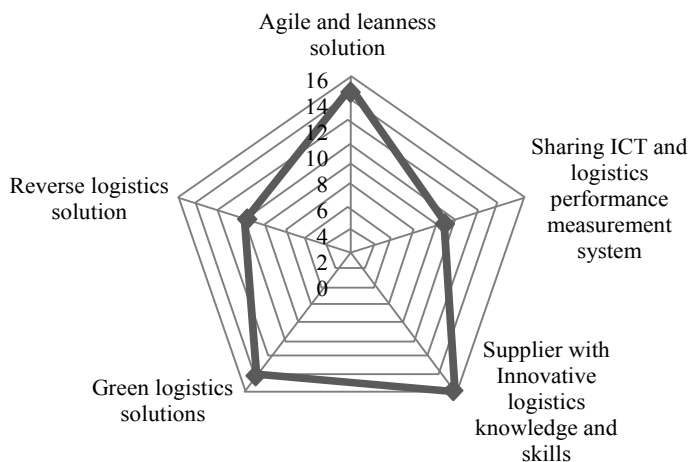
Tab. 3: Coding and grouping qualitative data from the interviews

**Andrea Chiarini**  
**Alex Douglas**  
 The impact of logistics solutions on customer satisfaction: an exploratory qualitative study of manufacturing companies

Interview focus: What are the best logistics solutions for improving customer satisfaction?			
Responses	Initial coding	Concordant respondents ( $\geq 9$ )	Focused coding (theoretical categories)
Data from the 12 interviews	Using leanness solutions	15/16	Agile and leanness solutions
	Using agile solutions	15/16	
	Using packaging easier to handle and storage	15/16	
	Using agile reverse logistics in case of defective products	14/16	
		Average 14.75	Sharing ICT and logistics performance measurement system
	Using the same logistics ICT solutions from the customer to the supplier and its sub-suppliers	9/16	
	Sharing at least KPIs such as on-time delivery, percentage of compliant packaging	9/16	
		Average 9	
	Supplier able to design logistics solutions involving its sub-suppliers	15/16	Supplier with innovative logistics knowledge and skills
	Supplier with innovative logistics knowledge and skills	16/16	
		Average 15.5	
	Packaging in compliance with all laws and regulations	14/16	Green logistics solutions
	Recycling of packaging	13/16	
	Reuse of boxes and containers	15/16	
		Average 14	
	Managing reverse logistics for environmental problems	10/16	Reverse logistics solutions
	Managing reverse logistics at the product's end-of-life	9/16	
		Average 9.5	

Source: our research

Fig. 1: The importance of the five theoretical categories



Source: our research

In the following five sub-sections the paper analyses and discusses further details about these logistics solutions with in-depth analyses of the managers' responses and comments.

#### *Agile and leanness solutions*

According to all interviewed supplier and logistics managers, in order to increase customer satisfaction their suppliers have to embrace some lean and agile solutions. All the respondents underlined how the focus is to increase on-time delivery performance and at the same time reduce the delivery time. To achieve these performance improvements the supplier has to embrace lean and agile solutions. Some respondents stated that in the past their suppliers met their on-time delivery goals by means of high levels of inventory. Products were always available in high quantities but unfortunately this way of managing the warehouse is not economically viable in the long term for suppliers who, sooner or later, as a consequence of higher inventory costs, start increasing the cost of their products. To avoid this, suppliers have to implement *Just-In-Time* solutions such as *Kanban*<sup>3</sup> or *consignment stock*<sup>4</sup>. Interestingly, different managers with similar words stated: *you cannot increase the level of service for your customer just by using high inventory. The more inventory, the more the problems in your operations.*

Out of the 16 respondents, 15 believed that lean solutions are fundamental. Indeed, customer satisfaction derives from having always the right amount of products at the right time with reduced costs.

<sup>3</sup> Kanban is a Japanese term meaning card. Cards can be seen within the container of products when it is emptied, allowing the production and delivery of new products before a shortage to the customer develops.

<sup>4</sup> With the consignment stock, products are in possession of the customer that is not the products' owner; this usually is the supplier. The supplier manages and provides the products at the customer's warehouse.



Out of the 16 respondents, 15 also believed that their suppliers had to develop new agile solutions in order to reduce transportation and delivery times. Agile solutions such as fast opening and closing as well as easy transportation were very important for all 16 respondents. For instance, one manager declared that transportation design is usually managed by the supplier and you cannot do anything to improve it. Moreover, the packaging had to be in compliance with dimensions and characteristics designed by the customer increasing in this way its standardisation. According to almost all the respondents, standardisation is one of the most important solutions for reducing costs of transportation, handling and storage. Furthermore, 14 out of 16 respondents believed that agile solutions had to be applied in case of defects or order discrepancies when products had to be returned to their suppliers. According to the 14 respondents, this process was fundamental and the supplier had to implement logistics solutions such as fast track air freight and specific cargo services. According to the respondents, their suppliers also had to hold in their warehouses safety stock dedicated to the replacement of defective products.

#### *Sharing ICT and logistics performance measurement system*

Something less tangible, such as the ICT system, can increase customer satisfaction; however, based on respondents' answers, it seems less important than other categories. In fact, just nine respondents out of 16 believed that using the same logistics ICT solutions from the customer to the supplier and its sub-suppliers would be of any help. These nine respondents suggest that the supplier should implement ICT solutions such as the same inventory management software, the same electronic picking systems, the same barcodes and electronic shipment notifications.

Among the respondents, there were also seven opponents to sharing ICT logistics solutions. According to these managers, a supplier could implement a different ICT system for each customer. This would fall on the cost of product because the supplier could not manage such a complex logistics organisation.

A manager, for instance, explained how they had implemented a very expensive Enterprise Resource Planning (ERP) software and the suppliers, especially the small-sized ones, could not afford such investment. Out of the 16 respondents, nine were of the opinion that customers and suppliers should at least share logistics KPIs. Although the nine respondents propose different KPIs, they agree with each other that the most basic and fundamental KPIs should be on-time delivery and percentage or number of packaging complaints (e.g. damaged, badly packed and sealed, contaminated, not in compliance with laws and regulations).

#### *Supplier with innovative logistics knowledge and skills*

Another non-tangible asset that the supplier has to have to increase customer satisfaction is good logistics knowledge as well as logistics skills. 15 respondents out of 16 believed that the supplier had to be able to design new logistics networks required when markets changed. One of the respondents for instance gave an example of a supplier who was able to implement from scratch a logistics network for supplying a new Chinese

plant. Another respondent gave an example of co-designing with the supplier of a particular packaging and transportation solutions against saltiness in some docks.

According to all 16 respondents, the ability of designing logistics solutions was strictly linked to the supplier skills acquired over time.

#### *Green logistics solutions*

Customer satisfaction is also linked to green logistics solutions related to packaging and transportation. First of all, according to 14 respondents, the packaging had to be in compliance with all the environmental laws and regulations. This was taken for granted. According to all the respondents, the packaging had to refer to all data and information due by law such as the CLP Regulation (European Union, 2008). If the packaging did not contain such data the company could be fined by the authorities and this could even jeopardise the business.

By the same token, packaging and boxes used for carrying the products had to be recyclable and reusable. In particular, according to 15 respondents, boxes had to be reused several times between the customer and its supply chain thus avoiding the cost of buying new boxes.

Unusually just six respondents out of 16 pointed out their attention to green logistics solutions linked to transportations. Therefore, according to the criteria of also taking into account theoretical categories stated by more than eight respondents (from 9 to 16) it has been considered not that relevant. These six respondents suggested that for their satisfaction it was important to choose greener couriers and green transportation modes. However, according to these respondents, there could be a trade-off between green couriers, cost of transportation and the quality of transportation service. Indeed, it was not expected that the best courier in service was also the greenest or the cheapest. According to some interviewed managers the current economic crisis has brought into question expenditures related to green solutions for transportations.

#### *Reverse logistics solutions*

According to the literature review reverse logistics could be divided into different processes. One of them was fundamental to giving good service to the customer when the product was defective or there were order discrepancies. Another relevant process within the so-called reverse logistics was linked to the end-of-life of the product. Customers, at this particular final stage, often had to throw out the product transferring it from the point of use and disposal to the point of treatment. According to 9 of the 16 respondents, if the supplier could entirely manage this process, including all the logistics activities, it was a significant advantage for the customer. However not all respondents agreed with these particular solutions: two respondents were uncertain, while six considered the solution entirely managed by the supplier too expensive and they preferred to dispose of the product waste themselves. Once more, according to the six respondents, the current economic crisis has slowed down the implementation of processes such as reverse logistics for the end-of-life.

Sadly, one manager stated: *in 2013 our turnover plummeted by 20%, who cared about product end-of-life? We just did not sell any new product.*

Finally, for ten respondents it was important that the supplier was able to manage the return of products in case of environmental problems such as wrong environmental labelling or leaks, oxidations, contaminations, and so on.

**Andrea Chiarini  
Alex Douglas**  
The impact of logistics  
solutions on customer  
satisfaction: an  
exploratory qualitative  
study of manufacturing  
companies

## 5. Conclusions

This research study began with a literature review where eight key issues about customer satisfaction and logistics solutions were identified. These key issues were used to design a semi-structured interview questionnaire. Some managers were asked to give their views on the kinds of logistics solutions their suppliers would have to implement to increase their customer satisfaction.

Based on the number of respondents, agreeing with the particular logistics solutions, five theoretical categories were ranked in order of importance. In this way the category 'Supplier with innovative logistics knowledge and skills' was surprisingly identified as the most important category for increasing customer satisfaction. In this category customers required that their suppliers should have the ability of designing new logistics networks and solutions particularly when markets change. Ranked second was 'Green logistics solutions' which refers to the compliance of the packaging with laws and regulations as well as reuse and recycling of the product. Ranked third was bound to lean and agile solutions. According to the literature review this is the most expected result. Indeed, solutions linked to on-time delivery and quickness of delivery were especially taken for granted by customers.

Last but not least, two theoretical categories came in the last positions in terms of interest; these were 'Reverse logistics solutions' and 'Sharing ICT and logistics performance measurement system'. Reverse logistics solutions were solely related to environmental problems of products and the special stage of the end-of-life of the product. Unexpectedly, the sharing of ICT solutions and performance measurements was deemed to be not as important as the other categories. This view seems due to the fact that the senior managers interviewed were conscious that sharing a different ICT system for each customer could be unaffordable for their suppliers. Moreover, the lack of interest about reverse logistics solutions from an environmental standpoint as well as other issues related to the product end-of-life management seem linked to the current economic crisis and deserve to be better investigated.

This research has several limitations which lead to avenues for new research. First of all the qualitative inductive inquiry was based on a small sample of 12 manufacturing companies and 16 interviewees. In this sense it could be considered an exploratory research study. Future research could use a larger sample to facilitate a more quantitative study associated with a survey and statistical analyses and tests. The five theoretical categories could become hypotheses to be tested. Furthermore, the research scope could be broadened to different kinds of industries and to companies which belong to different geographical areas.

This research has also brought to light some interesting practical implications. Practitioners who want to implement logistics solutions in manufacturing companies using the results of this research will be aware of the priorities to pursue in terms of customer satisfaction.

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**Andrea Chiarini  
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# Drivers and implications of medical tourism: a neo-institutional perspective<sup>1</sup>

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## Abstract

**Purpose of the paper:** *The paper aims at adding a new contribution to the field of Medical Tourism by proposing a Situationist View of the phenomenon. In doing this, we have taken into account the global dimension of Medical Tourism, thus widening the well-known neo-institutional framework.*

**Methods:** *We scanned Business Source Premier, Elsevier Freedom Collection, and JSTOR, using “Medical Tourism and neo-institutionalism” search criteria. After realizing the lack of resources about the topic, we matched the available contributions about Medical Tourism and neo - institutionalism in order to develop a new theoretical framework.*

**Findings:** *The original neo-institutional model has been widened for the first time in order to provide a better understanding of Medical Tourism’s worldwide dimension.*

**Originality and limits of the study:** *The main contribution of the paper is its potential to reach beyond the more narrowly focused journals where many of the contributions about Medical Tourism reside.*

*The lack of empirical evidence is one of the main limits of the paper. Because of the innovativeness of the developed theoretical framework, future investigations need to be carried out.*

**Practical Implications:** *The developed theoretical framework provides the basis for a better understanding of Medical Tourism at a global level, as well as of the dynamics that underlie it. Additionally, our paper poses new and interesting research questions about the potential sustainability of Medical Tourism at a societal level, thus requiring future investigation into the issue.*

*Key words: medical tourism; neo-institutionalism symbolic institutional framework; normative institutional framework*

## 1. Introduction

Medical or health tourism has increased greatly in recent years, since a large number of patients from all over the world have travelled to other host countries in order to receive medical care.

Even if travel for medical care (and wellbeing) has long existed, some differences are soon emerging and a form of “reverse globalization” is still

<sup>1</sup> The paper has been developed thanks to the Funds for a Research Project of the University of Foggia in 2014. It is the result of the joint collaboration of the three authors (cited in alphabetic order). In fact, Canestrino Rossella is responsible for sections 1, 4 and 7; Magliocca Pierpaolo is responsible for sections 2, 3 and 5; Nigro Claudio is responsible for section 6.



arising: patients from more developed countries move to less developed and emerging countries driven by a combination of costs, access to services and quality of the health care (Connell, 2013). Thailand, Singapore and Malaysia, but also India, are capitalizing their reputations as the most important medical tourism destinations in the world by combining high quality medical services at competitive prices with tourist packages. Thailand is, for example, the preferred destination for cosmetic surgery and sex change operations, while Singapore attracts patients who need neurological surgery and stem cell therapy (Pocock and Phua, 2011).

*But why do people travel to less developed countries in order to receive medical care?*

Generally speaking, patients travel to another country to receive more affordable care, or care that is more accessible than in their home country; in particular, cross-border health care is motivated by lower costs, avoidance of long waiting times, or services that are not available in one's own countries (Hopkins *et al.*, 2010).

Not surprisingly, Thailand, Singapore, Malaysia, India and East Asia are the preferred destinations by US patients. The latter ones are mainly driven by the rise of health costs in the US, but also by the significant reduction in the percentage of US residents with healthcare insurance.

In many less developed and emerging countries the healthcare industry is dominated by the private sector. Private profits - mainly deriving from fees paid by foreign patients - are often replaced offshore to companies located in different countries in order to be invested in private hospital chains. Thus a "double healthcare system" develops: one, private, high quality system, limited to foreign or rich patients; and another, public, low quality one, addressed to national citizens who are unable to pay (Pocock and Phua, 2011).

But that's not all.

*Medical Tourism* may foster economic development in host countries, encouraging foreign direct investments in both health and tourism infrastructures. This would explain why governments in Indonesia and Vietnam have expressed their interest in supporting the industry (Blouin *et al.*, 2009).

In spite of this, *Medical Tourism* poses a wide academic debate about the differences, in both normative and moral rules, that actually exist at an international level.

The lack of homogeneity among national rules impels patients to look abroad to undergo "extreme" procedures, e.g. stem cell therapy, surrogacy and even euthanasia, which are not undertaken in their home countries (Higginbotham, 2011; Inhorn, 2011). In addition, what is considered a-moral (or not allowed) at "home" becomes moral in the host country, thus posing important ethical concerns (Canestrino, 2007), that suggest future exploration.

Depending on these considerations, our paper aims at analyzing both the drivers and the implications of *Medical Tourism* by adopting a *Situationist View* (Mastroberardino and Nigro, 2009; Calabrese *et al.* 2011). In doing this, we provide a neo-institutional interpretation of the phenomenon at a worldwide level for the first time.



Our paper is a theoretical one: sections 2, 3 and 4 point out the literature review about *Medical Tourism*, examining the reasons why people travel to access to cross-border health care. Section 5 and 6 provide new insights by exploring *Medical Tourism* within the Neo-Institutional Framework. Discussions and conclusions are shown in section 7. Within this final section, suggestions for further research are also provided.

Rossella Canestrino  
Pierpaolo Magliocca  
Claudio Nigro  
Drivers and implications  
of medical tourism:  
a neo-institutional  
perspective

## 2. Cross-border health care: the conceptualization of Medical Tourism

Definitions of *Medical Tourism* shape an undifferentiated box inside which the terms “Medical Tourism”, “Health Tourism”, or “Medical Travel” involve many aspects of a more complicated, and often little understood, phenomenon, like invasive procedures, medical check-ups, dental tourism, wellness tourism, and “diasporic tourism”, as well as maternity or even death tourism (Connell, 2013).

As a consequence, the drivers that underlie the phenomenon are frequently underestimated.

This is the reason why the more minimalist definitions of *Medical Tourism* need to be specified.

Some authors often refer to *Medical Tourism* as a form of “travel” undertaken by citizens to obtain medical care (Cormany and Baloglu, 2011) without any reference to the type of procedures the patients expect to undergo. But the interventions range from yoga and massages, cosmetic surgeries, and dentistry, to operations like hip replacements and transplants, reproductive procedures and even “death tourism”.

Not surprisingly, Wellness Tourism is generally the subject of a distinct literature (Smith and Puczko, 2009); Dental Tourism has also sometimes been excluded from definitions of *Medical Tourism* (Pollard, 2011; Turner, 2008).

Depending on the above considerations, *Medical Tourism* is distinct from Health Tourism (Lunt and Carrera, 2010; Lunt *et al.*, 2012), because the latter is mainly devoted to low-key, therapeutic and non-invasive procedures such as check-ups, water-care and dentistry (e.g.: Wellness Tourism) (Connell, 2013).

Some authors neglect the leisure aspect of *Medical Tourism*, while many others emphasize the deep linkage between the health and tourism industries under the pressure of *Medical Tourism*.

According to Kopson (2010, p. 1) *Medical Tourism* consists in “travel[ing] to another country to receive medical, dental and surgical care while at the same time receiving equal to or greater care than they would have in their own country...because of affordability, better access to care or a higher level of quality of care”. For Cormany and Baloglu (2011), *Medical Tourism* refers to “the act of travelling abroad to obtain medical care”. Similarly, Adams *et al.* (2013) refer to the phenomenon as the practice of patients to travel out of the country with the intention of receiving medical care. The authors also focus on the distinction between public and private health care since medical tourists are patients who pay for medical care “out of pocket”.

Johnston *et al.* (2010) emphasize “patients’ intentions” to access medical care and often surgery procedures by leaving their country of residence,

while Connell (2006) highlights the linkage between patients' travel for care and their expectations concerning substantial and long-term outcomes.

The concept of "Tourism" has been largely neglected by the authors of the above contributions. But without ignoring the pain and desperation that are implicit in some medical procedures, and that often led patients to go abroad, connotations of pleasure, relax, and education also belong to the *Medical Tourism* Literature.

Laws (1996) defined *Medical Tourism* as travelling from home to other destinations to improve one's health condition as well as one's type of leisure. Connell (2006) described *Medical Tourism* as popular practice of mass culture according to which people look for cross-border medical care taking the opportunity to visit the host country and enjoy local touristic attractions.

Similarly, Jagyasi (2008, p. 10) refers to *Medical Tourism* as "the set of activities in which a person travels often long distance or across the border, to avail medical services with direct or indirect engagement in leisure, business or other purposes". The underlined perspectives include: "a vacation that involves travelling across international borders to obtain a broad range of medical services. It usually includes leisure, fun and relaxation activities, as well as wellness and health-care service" (Heung *et al.*, 2010, p. 236).

Generally speaking, health tourists take the opportunity to visit a popular travel destination, thus combining health care with a vacation.

The factors driving *Medical Tourism* and its worldwide growth will be examined in the following section.

### 3. Why do people travel for medical care?

From a general perspective, *Medical Tourism* may be broken down into two main categories: a) Outbound *Medical Tourism* (When patients travel away from their home country); and b) Inbound *Medical Tourism* (When foreign patients go to a given country to receive medical care - e.g.: India, Malaysia, or Singapore)<sup>2</sup>. For our purpose, we only investigate outbound *Medical Tourism* and the reason why people go abroad for medical care.

Many factors drive the actual growth of *Medical Tourism*. Among these:

- 1) The rapid rise of healthcare costs in many developed countries and the substantially lower costs of healthcare abroad (e.g.: Thailand, Malaysia and Singapore, but also Hungary, Poland, Turkey and Mediterranean countries) (Pocock and Phua, 2011; Kopson, 2010);
- 2) The long waiting times in many developed countries and the speed of obtaining treatments abroad (Lunt and Carrera, 2010; Hadi, 2009); and
- 3) The presence of legal, or moral restrictions that impel patients to go abroad for treatment that is not available at home (Connell, 2013).

<sup>2</sup> Kopson (2010) referred to three main categories: a) Travel away from the U.S (Outbound); b) Travel to the U.S. (Inbound); and c) Travel between two non-U.S. countries (non-U.S.).

By analyzing the U.S. market, Kopson (2010) included, among the most common driving factors of *Medical Tourism* growth, the significant reduction in the percentage of U.S. residents with healthcare insurance. Similarly, the tightening of entry requirements in the U.S. (and in many other western countries) after the attack on the World Trade Center on September 11<sup>th</sup> 2001, diverted a large share of patients from the U.S. to other destinations like Jordan or Cuba (Hadi, 2009).

But the leading driving force of outbound *Medical Tourism* is the difference in costs for various treatment options between developed and emerging countries.

Table 1 shows the comparative costs of different medical procedures. We used the data provided by allmedicaltourism.com, as well as by health-tourism.com, treatmentabroad.com and the Italian Portal for Medical tourism, in order to compare the prices for the same procedures in both the U.S. and the most important emerging destinations for *Medical Tourism*.

For an aortic or heart bypass, U.S. patients may save up to 85% on medical costs by going to India, and up to 92% for a total disc replacement in Malaysia.

The increased ease and reduced costs of international travel, the development of medical tourism facilitators (e.g.: destination managers, brokers, and insurance agencies), as well as the possibility to combine tourist attractions with medical procedures, have led a growing number of U.S. patients to go abroad for medical care.

Rossella Canestrino  
Pierpaolo Magliocca  
Claudio Nigro  
Drivers and implications  
of medical tourism:  
a neo-institutional  
perspective

Tab. 1: Comparative costs of selected medical procedures in India, Thailand, Singapore, Malaysia

Procedure Type	Procedure	US (Average price \$)*	India (U.S. \$)	Thailand (U.S. \$)	Singapore (U.S. \$)	Malaysia (U.S. \$)
Heart Surgery	Heart bypass (CABG)	52,450	7,500 – 8,500	18,700	16,400 – 16,500	12,100 – 19,400
	Heart valve replacement	60,000	9,500 – 10,000	13,900	12,300	9,200
	Angioplasty	23,930	3,300	10,000 – 20,000	9,700 – 14,000	4,900 – 10,700
Orthopedic	Hip Replacement	25,000	5,000	7,500 – 17,500	9,200 – 21,000	5,800 – 10,000
	Hip Resurfacing	49,830	5,000	10,000 – 17,000	13,000 – 15,000	8,200
	Knee Replacement	24,454	5,000	11,000 – 17,000	9,600 – 13,000	5,000 – 12,500
Spine and Neurology	Spinal Fusion Surgery	32,500	5,500 – 8,000	7,000 – 10,500	7,200 – 10,500	5,900
	Total Disc Replacement	71,200	9,500 – 11,500	11,400 – 19,600	32,500 – 48,000	4,900 – 6,600
Dental	Crown	2,000	120-180	490 – 550	300 – 500	Upon request
	Dental Implant	5,465	700-1,500	2,600	1,000 – 3,000	Upon request
	Teeth whitening (laser)	2,300	Upon request	235 – 490	Upon request	Upon request

Source: our elaboration. The data was compiled by medical tourism providers and online brokers.

\* Source: allmedicaltourism.com database. The averages depend on price differences (from lower to higher) for the same procedures among different countries.

Nowadays Thailand, India, and Mexico are the most important international hubs, not only for medical surgeries, but for cosmetic tourism as well. As Kopson (2010) reported, customers mainly move from the U.S., Canada, Britain and other European countries, since most cosmetic surgeries are not covered by medical insurance in the West countries and are therefore very expensive<sup>3</sup>.

Even if it is not our aim to focus on Italian *Medical Tourism* and existing differences between the U.S. and European healthcare systems, we underline the impact that travel and accommodation costs may have on Italian patients who look for treatment in India, Thailand or Singapore. Not surprisingly, Eastern Europe mainly appeals to Western Europeans and Italians due to its convenient location and much shorter airplane flights. Generally speaking, Eastern Europe offers cheap and reliable medical, dental and cosmetic surgeries, with Hungary, the Czech Republic, Poland, but also Croatia and Malta as the most popular selections by the Italian Portal for Medical Tourism.

However, lower costs are not the only driver for *Medical Tourism*: patients often travel abroad to avoid the long waiting times for procedures in their own countries (Hadi, 2009). In fact, waiting times vary among countries. In 2010, a high number of patients in Canada, Sweden, Norway, the United Kingdom and Australia reported waiting four months or more for elective surgery (Table 2).

Tab. 2: Waiting time of 4 months or more for elective surgery

Country	Percentage of patients who waited more than four months			
	2001-02	2005	2007	2010
Canada	27	33	27	25
Sweden				22
Norway				21
United Kingdom	38	41	30	21
Australia	23	19	18	18
New Zealand	26	20	13	8
France				7
Switzerland				7
United States	5	8	8	7
Netherlands			7	5
Germany		6	5	0

Source: OECD 2011

Excessive waiting times for non-emergency surgery often lead to stress, anxiety or pain (Sanmartin *et al.*, 2004). Therefore many patients, mainly Canadian, travel to India, Thailand, Malaysia, or Philippines, where they can get treated almost immediately (Hadi, 2009).

<sup>3</sup> The selected destinations by the Italian Portal for Medical Tourism are Costa Rica, Croatia, the Czech Republic, Hungary and Thailand for both female and male cosmetic surgery (as regards male cosmetic treatment on the other hand, Romania has been selected for hair transplant). Source: Italian Portal for Medical Tourism.

The presence of legal or moral restrictions also impels patients to explore alternative countries in order to undergo the procedures they are looking for (such as surrogacy or organ transplant). The development of *Reproductive Tourism*, *Medical Transplant Tourism*, and even *Death Tourism* poses important legal and ethical issues in this sense.

Rossella Canestrino  
Pierpaolo Magliocca  
Claudio Nigro  
Drivers and implications  
of medical tourism:  
a neo-institutional  
perspective

#### 4. Avoiding “the rules”: from “Reproductive” to “Death Tourism”

*Reproductive Tourism* consists in “the travelling by candidate service recipients from one institution, jurisdiction or country where treatment is not available to another institution, jurisdiction or country where they can obtain the kind of medically assisted reproduction they desire” (Pennings, 2002, p. 337). It refers to a practice in which people travel across national borders, in order to access reproductive technologies and services such as In Vitro Fertilization (IVF), gamete (sperm and egg) donation, sex selection, surrogacy, and embryonic diagnosis (Martin, 2009).

Legislation comes into play at almost every stage from when fertility treatment first takes place to how long frozen embryos may be stored following a successful treatment. For example, many countries like Turkey, China and Indonesia, will only permit IVF treatment for married couples, and New Zealand insists on a stable nuclear family to raise the child. By contrast, more liberal countries allow IVF for single people and homosexual couples.

*Reproductive Tourism* is not restricted to the U.S. or Australia, since the same phenomenon occurs in Europe, where patients from France, Germany or Italy<sup>4</sup> travel to Belgium to undergo treatments that are not available at home, like, for example, IVF with oocyte or sperm donation (Pennings, 2002) and fertilization treatments for homosexuals, lesbians, or singles (not allowed in Italy, France and Germany). In stark contrast to Germany, Spain, and Czech Republic’s restrictive rules are the European destinations selected by the Italian Portal for Medical Tourism for fertility treatments, but Cyprus, Russia, Ukraine, Greece, Turkey, India and Thailand also belong to the main selected destinations that provide reproductive outsourcing, since surrogacy and surrogate mothers are legal in those countries<sup>5</sup>.

As has been demonstrated by the Observatory on Reproductive Tourism (2012), 4,000 Italian couples went abroad for fertility treatments in 2011, 2,000 looked for gamete donors abroad and 32 Italian couples travelled to East European countries (mainly Russia and Ukraine), where surrogacy is allowed.

The same driver also leads *Transplant Tourism*. Currently, the World Health Organization estimates that of the 660,000 people in the world who require any form of transplant, 10% receive one every year. Of these, 10% receive their transplant through commercial *Transplant Tourism*.

<sup>4</sup> In Italy in vitro fertilization treatments have been limited for a long time due to restrictions on gamete donations. These restrictions were declared unconstitutional in April 2014 so donor sperms and eggs are now also allowed in Italy (Italian Constitutional Court, April 2014).

<sup>5</sup> Source: [Health-tourism.com](http://Health-tourism.com); [discovermedicaltourism.com](http://discovermedicaltourism.com).

The European Union tried to boost organ donations by introducing a Europe-wide donor card, and has formed a regulatory body to standardize the quality and safety of transplantation in an effort to reduce commercial transplants. The People's Republic of China, which performs more transplants per year than any other country except the USA, has recently introduced tougher restrictions and penalties for commercial transplantation (Watts, 2007).

As a consequence, Iran is one of the few countries where selling organs is legal (Ghods and Savaj, 2006). In spite of this, the trade of organs for transplantation is still practiced in many underdeveloped countries (Turner, 2007; 2008; Cohen, 2013).

Pakistan is one of the "largest host centers for transplant tourism" in the world, with over 2,000 organs sold per year, about two thirds of which go to foreigners (primarily from the Middle East, South Asia, Europe, and North America). All the sellers are very poor and in debt. In Bangladesh an increase in organ trade has also been registered.

Finally, *Death Tourism* refers to terminally ill patients who travel to countries where assisted suicide<sup>6</sup> or euthanasia<sup>7</sup> are legal. Unsurprisingly, Death Tourism poses a deep ethical debate because the individual request for euthanasia and assisted suicide is complex in origin.

In the United States, euthanasia is prohibited in all 50 states under homicide laws. However, assisted suicide is legal in the states of Oregon, Washington, and Montana. Several approaches to euthanasia and assisted suicide are emerging in Europe. Due to strict international laws on euthanasia and assisted suicide, cases have begun to increase in countries with more liberal laws like Switzerland, the Netherlands, and Belgium.

Assisted suicide has been allowed in Switzerland since 1942. Swiss law tolerates assisted suicide when patients commit the act themselves and helpers have no vested interest in their death; active euthanasia, on the other hand, remains illegal<sup>8</sup>.

The Netherlands and Belgium are the only other countries where laws permit euthanasia or assisted suicide.

As the data show, there were 4,360 patients with an explicit intention of hastening death in 2010. Among that, 310 ended their life without any explicit request, 192 requested assisted suicide, and 3,859 asked for euthanasia<sup>9</sup>.

Belgium has legalized euthanasia since 2002 (Cohen *et al.*, 2012) and it has become the first country to allow euthanasia for terminally sick children.

According to the conveyed picture, the main drivers of *Medical Tourism* seem to belong to the differences, in norms and values, that

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<sup>6</sup> A case where a doctor intentionally helps a person commit suicide by providing drugs for self-administration at that person's voluntary and competent request (Materstvedt, *et al.*, 2003).

<sup>7</sup> A case where a doctor intentionally kills a person by the administering drugs at that person's voluntary and competent request (Materstvedt, *et al.*, 2003).

<sup>8</sup> Article 115 of the Swiss penal code considers assisted suicide a crime if and only if the motive is self-interest. On the contrary, it condones assisted suicide for altruistic reasons (Hurst and Mauron, 2003).

<sup>9</sup> Statline Netherland (2010), Annual Report, [www.cbs.nl](http://www.cbs.nl)

characterize different countries. This entails that *Medical Tourism* develops by means of the existing gap between the *Normative Institutional Frameworks* and *Symbolic Institutional Frameworks* at a global level. This is the reason why the adoption of a neo-institutional approach allows us to innovatively interpret *Medical Tourism*, by opening it up to a novel understanding of the phenomenon.

In the following section a new perspective for interpreting *Medical Tourism* is shown. Starting from the original neo-institutional approach, as described within the literature, an extended model is proposed in order to involve the *Institutional Frameworks* and the *Symbolic Frameworks* of both domestic and host countries.

Rossella Canestrino  
Pierpaolo Magliocca  
Claudio Nigro  
Drivers and implications  
of medical tourism:  
a neo-institutional  
perspective

## 5. Toward a new perspective: Medical Tourism within the Neo-Institutional Framework

The idea that environmental forces affect organizational behavior is not new. The mainstream literature, in both managerial and organizational studies, recognizes that individual behavior depends on feedback from the environment, as well as on the interpretation of these inputs at an individual level.

What is really innovative here, in our opinion, is the emphasis on the dynamic re-shaping of the traditional concept of environment (more specified in the concept of organizational field), thanks to the uninterrupted interplay between *action* and *institutionalization* (Mastroberardino and Nigro, 2009; Mastroberardino *et al.*, 2013a).

According to neo-institutionalism, key suppliers, resources and consumers, regulatory agencies, and other organizations that produce similar services and products belong to an *Organizational Field*, which is considered as a “recognized area of institutional life” (DiMaggio and Powell, 1983), founded by the aggregation and relations among organizations.

The *Organizational Field* does not refer to any geographical area: it is populated by organizations that are geographically dispersed and by competitive and cooperative interactions among them. As opposed to the concept of industry, the *Organizational Field*<sup>10</sup> also involves normative and cultural relationships (Mastroberardino *et al.*, 2013b).

In the early period of its development, the *Organizational Field* is characterized by a high degree of variety since different organizational forms are located within it. But over time, such variety has decreased and the *Organizational Field* has been institutionalized because of organizations’ convergence toward models that are recognized as legitimate and with which new entrants must comply (Mastroberardino *et al.*, 2013a). An *Organizational Field* that has a high degree of institutionalization develops forces that lead to homogeneity among the actors. The way according to which neo-institutionalism explains this process of homogenization is

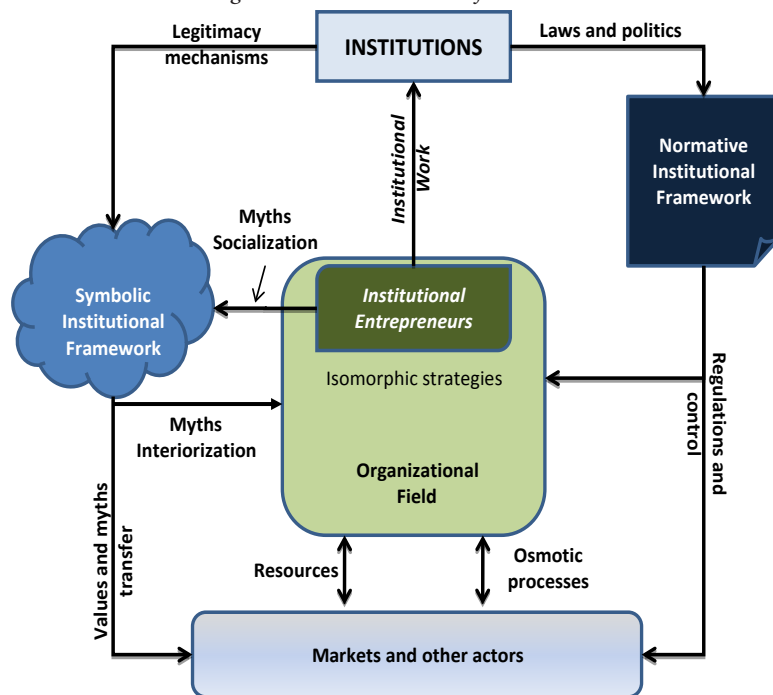
<sup>10</sup> The concept of Organizational Field refers to a community of organizations that share a common system of meanings. Within a field, actors interact with each other more frequently and more intensively than they do with actors outside of the field (Scott, 1998, p. 83)



called “isomorphism” (DiMaggio and Powell, 1983; Mastroberardino *et al.*, 2013b; Nigro *et al.*, 2015).

Figure 1 below shows the *Organizational Field* and its relationship with markets and institutions. As may be noted, the *Organizational Field* is animated by *Institutional Entrepreneurs* who interact with *Markets* and affect *institutions* through *Institutional Work*.

Fig. 1: The neo-institutional framework



Source: Carolillo *et al.*, 2011

*Institutional Entrepreneurs* are able to break with existing rules and practices by institutionalizing the alternative rules, practices or logics that they are championing. Strategies must therefore embed the change within a given *Organizational Field*, where different actors have invested in, are committed to, and take advantage of existing structural arrangements. It is not surprising, therefore, that *Institutional Entrepreneurship* manages a deep political process (Clemens and Cook, 1999; Greenwood and Suddaby, 2006). To be successful, then, entrepreneurial efforts must gain legitimacy, an undertaking that is more difficult as increasingly social groups with heterogeneous interests are involved in the process (Lounsbury and Glynn, 2001; Aldrich and Fiol, 1994).

The dynamic interaction between *Institutional Entrepreneurs* and *Institutions* gives rise:

1. on one hand, to a *Normative Institutional Framework* – new laws and norms according to which both *Markets* and *Organizational Fields* have to conform, even “*pro tempore*”;



2. to a *Symbolic Institutional Framework*, on the other hand that absorbs, socializes, and transfers myths and values to the market in order to provide the background for social legitimacy (Carolillo *et al.*, 2011).

As shown in figure 1, the *Normative Institutional Framework* and the *Symbolic Institutional Framework* affect the *Organizational Field* by establishing both the laws and moral principles according to which people have to adapt (laws and norms) or tend to behave (moral principles). In essence, actors and firms' behavior will be influenced by the prevailing rules and norms of their own *Organizational Field*, as well as by the culture, values, ideas and beliefs that are embedded in the social environment within which they are located. As Meyer and Rowan (1977) pointed out, the success or failure of an organization and its capacity to survive will no longer depend upon the effectiveness and efficiency of its performance, but rather on its adherence to ethical norms, rules, prescriptions and institutionalized knowledge. In choosing between alternative actions, subjects select those that conform most to institutionalized "standards" of conduct, regardless of their convenience (DiMaggio and Powell, 1983).

We do not propose that individuals are not autonomous agents, but we support the idea that they move within rules and symbolic patterns in order to gain legitimacy. In doing this, *Institutional Entrepreneurs* continuously modify the original standards by widening their own "space of actions" (Nigro *et al.*, 2011; Mastroberardino *et al.*, 2013a).

According to the above considerations, new implications may arise from the application of the presented theoretical framework to *Medical Tourism*. However, in its original formulation, the neo-institutional framework is highly embedded in the national context. An extension of the model is therefore required to fit with the global dimension of *Medical Tourism*, as demonstrated in the following section.

## 6. When norms and symbols cross national borders

As we noted in the previous sections, patients travel from home countries to host ones in search of looking for health care, mainly for cost-related reasons, time saving and availability of care that is illegal or un-ethical at "home". The players – key suppliers, brokers, resource and product consumers, agencies, etc. – seem to belong to the same *Global Organizational Field*. But since there are no mandatory Institutional or Symbolic Institutional Frameworks on a worldwide level, the latter maintain a national dimension.

Without neglecting the possibility that some international norms may control "key fields" in more than one country, laws and politics are nationally embedded: as a result, different *Normative Institutional Frameworks* may arise around the world. For this reason surrogate motherhood is illegal in Italy but allowed in Russia and Ukraine; euthanasia is only legal in the Netherlands and Belgium and patients coming from everywhere travel to Iran for an organ transplant (Ghods and Savaj, 2006).

Similarly, the *Symbolic Institutional Framework* is built upon the institutionalization of values and beliefs and their verbal manifestations – i.e.

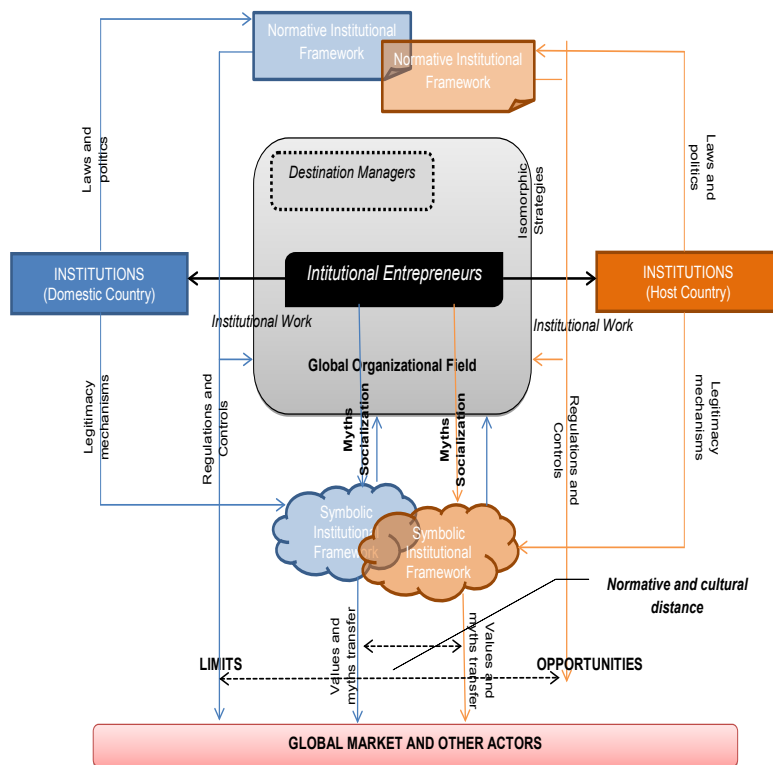
myths. In this sense, the *Symbolic Institutional Framework* mainly refers to the set of driving-rules and core beliefs that develop within a given society (which means culture), and affect what is considered *right* or *wrong* over time (Robertson 2002, Stajkovic and Luthans, 2001). Since no universal culture really exists, even under the pressure of globalization, different values and beliefs lead to different *Symbolic Institutional Frameworks*.

According to these considerations, different *Normative Institutional Frameworks* and *Symbolic Institutional Frameworks* may arise at a global level, referring, respectively, to domestic and host country Institutions.

Figure 2 shows an extended *Situationist* framework that may be used to interpret *Medical Tourism*.

With reference to *Medical Tourism*, the *Organizational Field* also acquires a global dimension: by moving in a global arena, *Institutional Entrepreneurs* interrelate with the *Institutions* of both domestic and foreign countries; they co-produce the *Institutional Framework*, i.e. the laws and rules that will control the market. In spite of the global dimension of the *Organizational Field*, the *Institutional Framework* maintains its local dimension, so rules and laws control *Medical Tourism* flows and procedures differently. Our considerations find support in the lack of internationally uniform norms aiming at governing *Medical Tourism* in different countries.

Fig. 2: The Situationist Framework of Medical Tourism



Source: our elaboration

Sometimes, the *Normative Institutional Frameworks* overlap, which means that a given practice or procedure is allowed – or not – in both domestic and foreign countries and that it is similarly ruled. When *Normative Institutional Frameworks* significantly differ, however, a normative “gap” could be established with negative consequences for patients engaging in procedures that are not allowed in their home countries. This is the case, for example, of *Reproductive Tourism*: Italian law prohibits surrogacy while this practice is allowed in many other countries like Russia or Ukraine. As consequence, Italian patients go abroad for surrogacy, but when they come back, they run the risk to be jailed up to two years, even if the procedure is allowed in the host country (Source: rule 40/2004).

However, from an entrepreneurial point of view, the differences between, and among, *Normative Institutional Frameworks* at a global level are not negative at all. On the contrary, when rules and norms differ new opportunities arise for all the actors involved in the *Medical Tourism* flow: international brokers, insurance agencies, destination managers, national and foreign governments, as well as travelling patients. Without the mentioned differences among *National Institutional Frameworks*, *Medical Tourism* would only be driven by differences in cost among countries and its convenience for patients would greatly diminish.

*Institutions* and *Institutional Entrepreneurs* also play an important role in shaping the *Symbolic Institutional Framework* through legitimacy mechanisms and myths socialization. But while laws and politics are mainly nationally defined, values and beliefs can differ within the same country because of the emergence of sub-cultures. Similarly, certain values may overcome national borders in order to embrace similar cultural groups.

As a consequence, both legitimacy mechanisms and myths socialization become more and more complex when different cultures cross, since diversity in values and beliefs leads to the establishment of different moral standards (Donaldson and Dunfee, 1994; Canestrino, 2007).

*But, what may happen when domestic and host country symbolic frameworks do not overlap?*

Every time patients go abroad for treatment that are considered ethically “wrong” in their home countries, they are looking for legitimacy in the host country, since the practices they need may be morally accepted abroad, but not at home. When those same patients come back home, they often have to face moral judgment and, at least, social blame. As a consequence, patients going abroad usually request to remain anonymous in order not to ‘face moral judgment when they come back home. As a result, intermediaries, brokers and destination managers very often engage all of their efforts to assure their clients’ privacy (Source: [ilportaledelturismomedico.com](http://ilportaledelturismomedico.com)).

Even when a given practice is allowed at a normative level, it may be morally refused, thus affecting individuals’ moral intimacy. This is the reason why, for example, even if it is a legal practice, euthanasia is differently accepted at a social level in Belgium<sup>11</sup>. Cohen *et al.* (2012) presented empirical evidence of differences in the acceptance of euthanasia by two

<sup>11</sup> Obviously, in the case of euthanasia, we refer to the patients’ family or friends, who come back home after they have assisted and supported the patient’s experience abroad.

Belgian cultural groups: Flemish and Walloon. In contrast to the Flemish's behaviour, the Walloon had a more negative attitude in performing euthanasia. The authors suggested that the influence of a euthanasia law on a particular society and the extent to which legal safeguards are followed are affected by culture and by societal symbolic meanings.

In such situations, *Institutional Entrepreneurs* may not be able to foster changes in the *Normative Institutional Framework* because of the over-embeddedness of the *Symbolic Framework*. In particular, referring to *Medical Tourism*, some examples are provided by the total rejection of some procedures, like surrogacy, assisted suicide, or trans-gender surgery, in countries where religion or even traditions lead to strong moral judgment. Unsurprisingly, we cannot wait for rapid changes in the Italian *Normative Institutional Framework*, because of the relevance that Catholicism has for the social acceptance and moral legitimacy of some medical practices.

As we noted above, the emergence of differences among *Normative Institutional Frameworks*, as well as among *Symbolic Institutional Frameworks* is the main driver for the development of *Medical Tourism* on a global level.

## 7. Discussion and conclusions

In spite of its rapid diffusion, *Medical Tourism* is a topic that is still little investigated within the field of management studies. The lack of resources about it may depend on the difficulty of defining the phenomenon, as well as on the ethic controversies arising by its diffusion in many emerging countries, like Thailand, Singapore, or Malaysia. The existing overlapping between the two different industries – health and tourism – makes the analysis even more complex, with reference to both the drivers and the consequences of *Medical Tourism* at a global level.

Accordingly, we aimed at providing a new and valuable theoretical contribution for the understanding of *Medical Tourism*. In doing so, we adopted a *Situationist* perspective in order to take into account both the normative and cultural influences on patients' choices to go abroad for health care and therefore on the emergence of the phenomenon.

The most important difference between the "traditional" *Situationist* framework (as explained in section 5) and our enlarged model is the global dimension of the *Organizational Field* within which *Medical Tourism* develops, since it has never been used to investigate a global phenomenon until now. Without neglecting the importance of cost drivers in fostering the phenomenon, we therefore underline how both the *Institutional Normative Frameworks* and the *Symbolic Institutional Frameworks* of domestic and host countries shape the background for the emergence of *Medical Tourism's* global growth. Every time *Institutional Normative Frameworks* or *Symbolic Institutional Frameworks* differ from one country to another, patients look abroad for health solutions that are not available or morally accepted in their home countries.

From a business perspective, the underlined gaps are also responsible for the emergence of business opportunities in a global market. In particular, we supported the idea that the higher the differences between and among *Institutional* and *Symbolic Frameworks* at global level, the higher the business opportunities abroad: if *Normative Institutional Frameworks*, as well *Symbolic Institutional Frameworks*, did not differ, there would be no actor capable of taking advantage of the development of *Medical Tourism*. It would mean that, in such a situation, *Medical Tourism* would be not developed at all.

The adoption of the *Situationist framework*, especially in its wider perspective, allows both researchers and practitioners to better understand the drivers that underlie the emergence and the diffusion of *Medical Tourism*.

In spite of this, however, other aspects need to be investigated, mainly in reference to the consequences and the impact that the examined phenomenon may have at a societal level. Despite the new business opportunities that may arise thanks to *Medical Tourism* for the involved actors – destination’ managers, international brokers, insurance agencies, hospitals, hotels, and so on – the international migration of patients may be responsible for the social un-sustainability of *Medical Tourism*. Not surprisingly, the latter has been criticized by many authors.

Firstly, in many destinations, the “dream of growth” must confront the challenges of social inequality and un-sustainability. A “dual healthcare system” seems to arise here, with highly specialized private clinics devoted to foreigners and wealthy domestic patients and a local and public healthcare system that is often unsuited to serve the local and poor population even for basic needs.

Secondly, as Adams *et al.* (2013) noted, the provision of medical care to foreign patients may encourage a shift in the allocation of resources such as public finance or human resources, from the public to the private sector.

Both the emergence of a “dual healthcare system” in many destinations, and the ethical questions related to the “morality” of extreme procedures that are not undertaken in the patients’ domestic countries may, therefore, damage the cornerstones of the social sustainability of *Medical Tourism*.

The supporters of *social sustainability* usually alert against the risks and challenges of *Medical Tourism* for global healthcare equity, pointing out the necessity for a global “governance” capable of routinely monitoring its growth, developing rules that acceptable to all stakeholders and maximizing the benefits of this approach for the health and the well-being of all populations. More specifically, *Medical Tourism*, as described in the previous sections, may affect fundamental human rights, such as those to life and health, by limiting or allowing individuals’ the freedom to access health care.

In according with our observations, many questions about *Medical Tourism* and the ethical issues following its rapid development need to be answered: Is *Medical Tourism* sustainable? How long will countries’ differences in costs, laws and norms support *Medical Tourism*? What about *Reproductive, Transplant and Death Tourism*? Can we assure the *social sustainability* of *Medical Tourism* considering emerging opportunities for both developed and underdeveloped countries?

These final unanswered questions encourage future investigations that open up to new and interesting research directions. This could be

accomplished by matching the various literary fields that are connected, on one hand, to *Medical Tourism*, and on the other, to *social sustainability*, which could enable us to expand our knowledge about the topic.

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# Sustainability, longevity and transgenerational value in family firms. The case of Amarelli<sup>1</sup>

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## Abstract

**Purpose of the paper:** In family business research, sustainability has never received as much attention as large corporations despite the relevance of their global economic impact. Thus, the paper's aim is to investigate this issue by taking two key structures into consideration: longevity and trans-generational value.

**Methodology:** Drawing on systems theory, we developed an exploratory conceptual framework (Trans-generational Sustainability Model - TSM) for family firms. We argue that the three pillars for the creation of trans-generational value, representing a long-standing value for family businesses, are growth, family success and local embeddedness quality. An exploratory case study on a long-lived Italian family firm (Amarelli) belonging to the Henokiens association, has been conducted to investigate some of the hypotheses that have been developed in relation to this preliminary model.

**Findings:** In the case of Amarelli sustainability seems to be the result of the combination of a unique strategic orientation and distinctive competences. The presence of family members in management positions is a major concern for the "enlarged" family and high quality of local embeddedness which are likely to support the creation of trans-generational value.

**Practical implications:** The balance between the three components of family firms' sustainability may provide directions for entrepreneurs in their family firms management, particularly during the succession phase or other disruptive changes involving their businesses.

**Originality of paper:** This article provides a review of significant trends in the strategic management approach by studying family firms' sustainability. Its original contribution is twofold: firstly by its accumulating evidence that the creation of "enlarged" trans-generational value may determine family businesses' longevity and sustainability, and secondly, system theory seems as the leading theoretical perspective.

**Key words:** family firms; sustainability; longevity; transgenerational value; local embeddedness

## 1. Introduction

In recent years, research debates in management have highlighted a demand for "sustainability" and "the need for corporations to pursue sustainability practices" (Linnenluecke and Griffiths, 2010). In the same years, increasing attention has also been given to studies on family businesses

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<sup>1</sup> Although the work is the product of a common reflection, paragraphs 1, 2.1, 2.3, 4.1, and 4.3 are attributed to Salvatore De Falco and paragraphs 2, 2.2, 3, 4, 4.2, 4.4, and 5 are attributed to Agostino Vollero.

(Chrisman *et al.*, 2010) due to the general acknowledgement of their global economic impact (Sharma and Sharma, 2011). Nevertheless, the topic of sustainability has still not been fully addressed in family businesses research (Yu *et al.*, 2012).

To narrow this gap to some extent, in this paper sustainability has been conceptualized with reference to family firms and defined as trans-generational value creation, which we consider the most appropriate way to examine and represent it.

The paper is structured as follows. First, we present the main theoretical constructs of sustainability, longevity, transgenerational value and local embeddedness and discuss their foundations in the context of family businesses, drawing on systems theory. Second, we develop an exploratory model (Sustainable Transgenerational Model - STM) to analyse and understand the creation of sustainable value for family firms. In particular, we contend that the sustainability of family businesses is a function of three systems (family, businesses owned by the family and local community) and could be analysed as the intersection of the performance obtained in these three systems. The STM model thus contributes to better explain the particular circumstances in which long-standing family businesses operate.

Third, we present a case study of a long-standing Italian family firm (Amarelli) to explore some of the hypotheses that have been developed in relation to this preliminary model. We conclude by discussing limitations, directions for future research and managerial implications toward this specific area of study.

## **2. Theoretical background and hypotheses**

The starting point of the conceptualization of sustainability for family businesses<sup>2</sup> must take into account the fact that families and the business are inextricably intertwined (leading to “family embeddedness”) (Aldrich and Cliff, 2003). The ongoing interactions between individual family members and the business entity generate the systemic conditions influencing the performances of family businesses. The systems approach (von Bertalanffy, 1968; Golinelli, 2010), analyses organizations as symbiotic interacting systems capable of taking into account both ongoing firm-family adaptation and dealing with external demands (Lomi *et al.*, 1997).

Indeed, the strong emphasis on daily processes and the entrepreneur’s lack of awareness in planning management transfer to successive generations might negatively influence the sustainability of a firm (Duh, 2012). Accordingly, sustainability is of the utmost significance for determining the adequate continuity and survival of both family and business systems.

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<sup>2</sup> It is to be noted that the concept of sustainability that is used in this paper is far from the one adopted by the Brundtland Commission (in connection with sustainable development) and refers instead to family business, in other words the ability of a family firm to survive trans-generational changes in time.

More generally, the “dual system” (family vs. business) inevitably leads to a discrepancy in perceptions of business goals because of the confluence of different stakeholders playing different roles in the ownership and management of business as well as in family life (Tagiuri and Davis, 1992). For this reason, most objectives of family firms are noneconomic in nature, like in the case of socioemotional wealth (Gomez-Mejia *et al.*, 2007), longevity and survival through generations (Zellweger and Astrachan, 2008; Yu *et al.*, 2012).

Some recent studies sustain that the overlapping between the family and the business is not just a limit to their performances (Chrisman *et al.*, 2005; Villalonga and Amit, 2006) but can also have positive long-term effects (Miller and Le Breton-Miller, 2005; Corbetta and Salvato, 2012; Napolitano *et al.*, 2013). A family is meant to last over time, and it is likely to share these long-term objectives with the business, especially if family members are present in management positions (Antheaume *et al.*, 2013). In this perspective, “new” value is therefore constantly created while primarily keeping in mind future family generations, not only with the objective to preserve current wealth.

It may therefore be expected that:

*Hypothesis 1* - In long-standing family firms, it is likely that the presence of family members in management positions is favoured by the willingness to create “new” value for future family generations.

## 2.1 Sustainability and longevity in family businesses

Sustainability has often been associated with the longevity of family firms, although there are only a few specific studies that combine the two (Antheaume *et al.*, 2013). Firms’ longevity has been analysed under different perspectives, mainly to conceptually identify the key factors and common organizational features of long-standing firms. A strong identity, a tolerant management style and moderate aversion to risk-taking (conservative financing policy) have been identified as the most important characteristics explaining longevity (De Geus, 1999; Collins and Porras, 2004)<sup>3</sup>. The limit of such an approach seems to be almost exclusive focus on internal features. A more encompassing perspective is necessary to consider both the process within an organization and the forces that are present in its environment (Kwee *et al.*, 2008).

Investigating sustainability and corporate longevity together seems to entail a framework where different systems (both internal and external) are included. Recent studies, in fact, seem to suggest that longevity and sustainability should be addressed not only with reference to a single family business entity, but by keeping in mind all of the business activities that are linked to an enterprising family (Zellweger *et al.*, 2012), as family businesses - even smaller ones - are often involved in a range of business initiatives (Jennings *et al.*, 2011).

<sup>3</sup> In general, the topic of longevity remains under-researched, especially in the field of family businesses (Miller and Le Breton-Miller, 2005; Corbetta and Salvato, 2012) where empirical studies are scarce and partly conflicting in their results.

Moreover, a focus on both businesses and families seems appropriate because research on family firm survival has often neglected the overall portfolio of activities of business families (Zellweger *et al.*, 2012), thus failing to determine other appropriate forms of succession (Bennedsen *et al.*, 2006) and creation of transgenerational value.

## 2.2 *The creation of transgenerational value*

The focus on the potential creation of “transgenerational value”, indeed, seems to be one the most important theoretical features that discriminate family from non-family firms (Chua *et al.*, 1999). Following Zellweger *et al.* (2012), the creation of transgenerational value in family firms should be considered as the combination of two main factors (see Figure 1):

- the set of available resources and distinctive capabilities resulting from systems’ interactions (also referred to as the “familiness” of the firm - Habbershon and Williams, 1999; Habbershon *et al.*, 2003; Sirmon and Hitt, 2003; Zellweger *et al.*, 2012);
- the entrepreneurial (and family entrepreneurial) orientation, e.g. the processes, decision making styles, actions and practices that characterize the strategic orientation of the family system (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996)<sup>4</sup>.

These two elements, individually considered, “are necessary but not sufficient conditions for the long-term success of the family system. Without resources, entrepreneurial orientation lacks the means to be realized” (Habbershon *et al.*, 2010, p. 21). Vice versa, the lack of proper orientation makes resources and capabilities useless and unexploited. In other words, new streams of long-lasting economic and non-economic performance (entrepreneurial, financial and social performance) are attainable only through the integration of specific entrepreneurial mind-sets with family-driven capabilities (Zellweger *et al.*, 2012).

A stable commitment to follow a strategic orientation, ensured with an effective governance and management system, could help family firms endure for generations (Lumpkin *et al.*, 2010; Yu *et al.*, 2012). The focus on transgenerational value creation assumes a longitudinal perspective that suited sustainability issues that are basically long-term oriented.

We therefore sustain that:

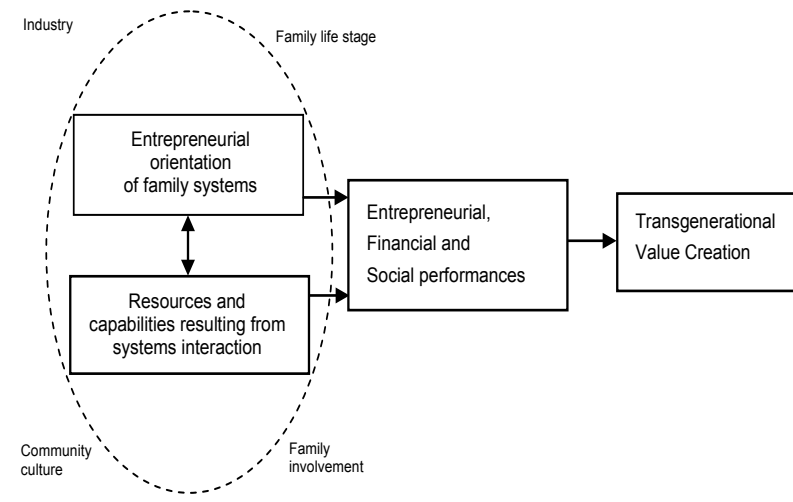
*Hypothesis 2* - Sustainability in long-standing family firms derives from the combination of a unique strategic posture and depends on available resources and distinctive capabilities resulting from the systems’ interactions.

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<sup>4</sup> Entrepreneurial orientation (EO) is a widely used construct in academic research that investigates the “strategic posture” of firms. The key dimensions of EO are innovativeness, pro-activeness and risk-taking (Miller, 1983; Covin and Slevin, 1989; Lumpkins and Dess, 1996). Family entrepreneurial orientation (FEO), instead, refers to the entrepreneurial mind-set of the family (Zellweger *et al.*, 2012).

Fig. 1: Creation of trans-generational value in the family system

Salvatore Esposito De Falco  
Agostino Vollero  
Sustainability, longevity  
and transgenerational  
value in family firms.  
The case of Amarelli



Source: adapted from Zellweger *et al.* (2012).

### 2.3 Local embeddedness

The process of creation of transgenerational value (Habbershon *et al.*, 2010) presents different benefits, such as focus on the exploration of entrepreneurship by considering a dual system in which the family is a distinct stakeholder group that influences the logic which handles the decision making process at both systems levels (family and business) (Zellweger *et al.*, 2012). Despite these benefits, such a perspective seems to be restrictive to some extent, giving more importance to the structural aspects of organizations, families, and relegating environmental forces (or supra-systems) in a minor role on determining family firms' long-term success (Ginsberg and Abrahamson, 1991). The necessary dynamic search for harmony of family businesses both in their internal and external relationships (Baccarani and Giarretta, 2010) leads us to consider the creation of transgenerational value as a process that goes beyond the family and business activities that are controlled by it and is linked to the "anchorage role" in the territory on behalf of the organization (Esposito De Falco, 2012; Antheaume *et al.*, 2013).

This means that a third component, in addition to the two mentioned systems, seems decisive for sustainability in family firms: the local community in which the firm operates (Craig and Dibrell, 2006; Berrone *et al.*, 2010; Colli, 2012). In the same way, Allouche and Amann (2002) maintained that both internal and external stakeholders should be considered, by extension, "as members of the family", with a focus on stable and durable relationships. This "new" conceptualization of transgenerational value creation could therefore be considered as the ability of a family to preserve not only the

cohesion of its members but rather *lato sensu* of its local community (Astrachan, 1988) here considered as an “enlarged family” (Colli, 2012).

It may therefore be expected that:

*Hypothesis 3* - In long-standing family firms, the creation of transgenerational value is likely to relate to “enlarged” families (i.e. involving the non-family employees and local stakeholders with which the firm operates).

This argument is in line with several empirical results that show higher levels of corporate social responsibility and community citizenship in family businesses comparison with non-family businesses (Craig and Dibrell, 2006; Berrone *et al.*, 2010; 2012). It is also likely that the reciprocal bonds between family and community members drive firms to pursue the welfare of those who surround them without considering only transactional economic gains (Brickson, 2007). The embeddedness of family firms in their communities, e.g. the development and maintenance strong social bonds with local stakeholders, is also reinforced by the high value that is usually attributed to the sponsorship of associations, charities, special events and local sports teams in the territory (Berrone *et al.*, 2010; 2012). Thus, local embeddedness looks like a reasonable justification for strategic decisions, which may appear “paradoxical” from an economic point of view but is actually effective from a socio-economic perspective (Antheume *et al.*, 2013).

In this perspective, family businesses may present a deep embeddedness with the local community in which they arose and grow. The family business draws its strength from the territory in which it operates and creates value (which is either tangible, in terms of employment, infrastructure, or intangible in the case of community services, consolidation and preservation of identity, etc.). Accordingly, family firms tend to develop isomorphic attitudes and behaviors because of both tangible and intangible specific routines originating from their specific territory (Esposito De Falco, 2014).

In general, enlarged transgenerational value, and the resulting sustainable performance, goes beyond the intrinsically familiar dimension, as it should ensure development and prosperity to future generations of the local community. Briefly, the local community in which the firm operates constitutes the third system interpreting a sustainability issue for family businesses; moreover, the quality of local embeddedness seems to be functional to the creation of sustainable transgenerational value.

We therefore suggest that:

*Hypothesis 4* - In long-standing family firms, the creation of transgenerational value is likely to be associated to the quality of local embeddedness.

In the following section, we will systematize the theoretical arguments above.



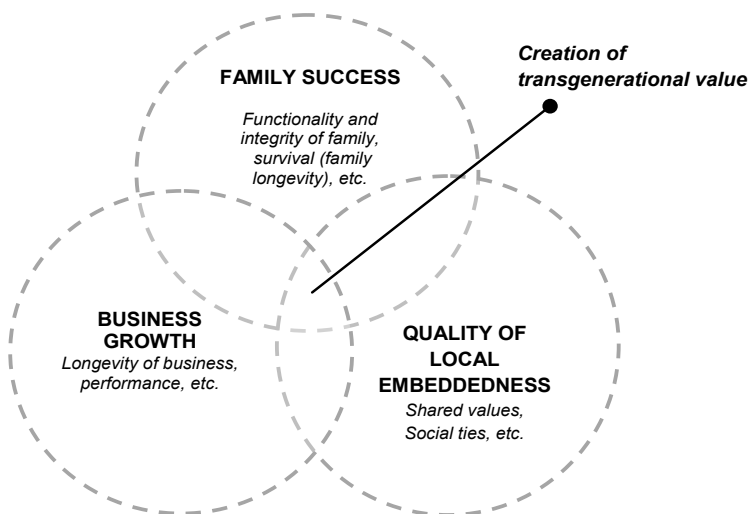
### 3. A conceptual model for sustainability in family businesses

Salvatore Esposito De Falco  
Agostino Vollero  
Sustainability, longevity  
and transgenerational  
value in family firms.  
The case of Amarelli

The creation of transgenerational value, i.e. the sustainability of the family business, is therefore likely to be a combination of three systems' outcomes:

- Business growth, in terms of business longevity, the firm's performance, its ability to innovate, etc.;
- Family success, i.e. the family's cohesion and functionality, its survival as an enterprising family (family business' longevity), family wealth, etc.;
- Quality of local embeddedness (shared community values, social ties, etc.).

Fig. 2: Sustainability in family businesses (Transgenerational Sustainability Model)



Source: our elaboration

The Transgenerational Sustainability Model (TSM), shown above in Fig. 2, is based on the systems conceptualization of Stafford *et al.* (1999) that suggests that both family functionality and business success are important in determining the sustainability of family businesses. The reciprocity of influence between the performance of the two systems (family and business) explains its firm's longevity and sustainability (Stafford *et al.*, 1999; Olson *et al.*, 2003)<sup>5</sup>. In terms of business growth, for example, expected firm performances depend on the impact of family characteristics in corporate decision making (Villalonga and Amit, 2006), especially in the case of decisions related to CEO succession (Bennedsen *et al.*, 2006). On the other

<sup>5</sup> A systemic representation of the family business, using a Venn diagram with three circles, can be traced back to Tagiuri and Davis (1992) and has progressively been adopted in family business research by other scholars (e.g., Stafford *et al.*, 1999; Olson *et al.*, 2003), thus becoming an explicit or implicit reference frame. In this paper, we use the same visual representation in order to make it easier to understand sustainability for family firms, without replacing the original model of Tagiuri and Davis (1992) which maintains its validity for broader purposes.

hand, family functionality and integrity, as specific outcomes of the family system, should be interpreted, in a broader sense, as the preservation of socioemotional wealth (Gomez-Mejia *et al.*, 2011).

Extending the model to a third component, i.e. success in creating adequate links with local stakeholders, the main assumption becomes that sustainability is generated from the intersection of enduring results in three interacting networks. In the TSM, the sustainability of family businesses would therefore result from the strategic ability to develop and simultaneously activate and maintain satisfactory relationships in these three systems over time. Sustainability, intended as an “enlarged” transgenerational value, results from the confluence of business growth, family success, and appropriate responses to the local community’s demands. Sustainability requires the ability of family members to cooperate in order to respond to environmental disruptions and to ensure both business and family success (Stafford *et al.*, 1999; Allouche and Amann, 2002), as well as the necessary conditions of consonance with local stakeholders (Golinelli, 2010) that assure quality in the contextualization of a firm<sup>6</sup>.

Transgenerational value therefore becomes the result of both the entrepreneurial ability of the family to transfer value to future generations of the family (Habbershon *et al.*, 2010; Zellweger *et al.*, 2012) and the ability to ensure the balancing of three systems’ objectives, i.e. family functionality, the growth of the business and positive impact on local communities, e.g. the ability of the organization to preserve the wealth of the territory in which the family firm was founded and grew. Reciprocal links with different constituencies in the territory (Miller *et al.*, 2009; Berrone *et al.*, 2012) are one of the characteristic aspects of the sustainability of family firms compared to non-family businesses. Local stakeholders and partners, such as time-honored vendors and suppliers (Uhlener, 2006) are often considered family members with whom they share a sense of belonging, values and identity aspects, promoting a sense of continuity and commitment to the business (Miller and Le Breton-Miller, 2005; Berrone *et al.*, 2012). For this reason, the building of strong ties is likely to result in cross-sector partnerships and collaborative decision-making processes (Boehm, 2005). In addition, family firms aim to consolidate the standing of their family in the territory in which they operate by sharing some benefits with local communities.

Furthermore, the TSM model perspective is justified, as it appears very difficult to separate the value created inside the family business from that generated outside of its boundaries (Colli, 2012).

The notion of sustainability as the creation of transgenerational value can accordingly contribute to resolving the divergence in the goals of family firm stakeholders in achieving sustainable outcomes. Balancing divergent objectives and opposing forces (e.g., the need for innovation in the business system versus the innate desire for continuity in the family) may help in exploiting potential synergies and overcoming “management

<sup>6</sup> The Consonance in Viable Systems Approach represents the compatibility - the progressive alignment - between systemic actors (Golinelli, 2010; Esposito De Falco and Gatti, 2012).

paradoxes” emerging from the overlap of conflicting systems (Nordqvist and Melin, 2010; Zellweger *et al.*, 2012).

Salvatore Esposito De Falco  
Agostino Vollero  
Sustainability, longevity  
and transgenerational  
value in family firms.  
The case of Amarelli

#### 4. The Amarelli case

In order to investigate our initial hypotheses which have been developed in relation to the TSM framework, we chose to conduct a single case study of a long-standing family firm (Amarelli). This firm is a member of the Henokiens, an association involving bicentenary family businesses that reflect the variables involved in our model in a satisfactory way<sup>7</sup>. The members of this association are in fact characterized by good financial health, permanence of ownership and geographical stability. Thus, the present case study will constitute a first critical test for our research hypotheses. A case study research strategy could be particularly significant for family businesses research due to their systemic nature (De Massis and Kotlar, 2014).

In the TSM model, long-lived family firms represent a particular situation in which there is coincidence between firm longevity and the longevity of the enterprising family (survival)<sup>8</sup>. In this sense, the creation of trans-generational value can be easily identified by the results achieved in three different systems by the core company.

The choice of a long-lasting family business is also justified by the fact that these types of family entrepreneurs are usually able to make their decisions in a systemic manner, considering different interconnected entities in a long-term perspective (Antheaume *et al.*, 2013).

The study follows a qualitative approach and uses multiple sources of evidence in order to ensure its construct validity (Yin, 1994).

Primary evidence was obtained from two meetings with the president of Amarelli (Mrs. Pina Mengano Amarelli), who is considered a key management informant, and from direct observation (visits to Amarelli's showroom in Naples). We also kept in touch with other family members in order to collect corporate material. We used documentary sources that were provided by the firm (internal documents, press reviews, corporate publications and historical archive documents) as secondary evidence.

Compared to other research strategies, the use of a qualitative interview supporting the case study methodology allows us to gain a deeper understanding of the situation and relate our findings to other contexts (Eisenhardt and Graebner, 2007). In preparation for the interview, a loosely

<sup>7</sup> Membership to the Henokiens Association is based on company longevity (the minimum period of existence is 200 years) and permanence (the family must be the owner or majority shareholder of the company and one member of the founding family must still manage the company or be a member of the board). Furthermore, the company must be in good financial health and up-to-date. Its name derives from the biblical patriarch Enoch (Hénoch in French). Founded in 1981 by the then-chairman of Marie Brizard, the association started with 30 members across Europe and Japan [3] and now counts 44.

<sup>8</sup> From the point of view of business history, Colli (2012) noted that survival indicates the continuity of control taken by the family over time, while longevity is measured in terms of the amount of time in which the firm is in existence without considering changes in its ownership structure.

structured interview guide was drawn up to allow the respondent to provide answers in their own words and have a great deal of freedom (Bewley, 2002). The face-to-face meetings were conducted in April-May 2014; the main interview took 2 hours and 10 minutes and was fully transcribed.

The data was analysed following an interpretative approach in line with Patton (2002), and therefore aggregating the answers to the five hypotheses, that were previously identified in the “theoretical background” section.

Therefore, the analysis of the case study was carried out by building an explanation of it according to theoretical hypotheses. The comparisons between the predicted and the actual patterns did not follow any quantitative criteria and any possible bias is due to the fact that it was necessary for researchers to use their discretion when interpreting the interview (Trochim, 1989).

Founded in 1731, Amarelli is a liquorice factory based in Rossano (Cosenza) in southern Italy. The family tree can be dated before the year 1000 in Calabria and has been active with the commercialization of licorice roots since 1500. In 2013, the firm had 35 full-time employees and generated a total turnover of about 4 million € and 30% of profits derived from sales in international markets (Europe, Russia, USA, Canada and Japan)<sup>9</sup>. The current production is diversified in different sectors: confectionery (pure liquorice and sweets, which constitute about 60% of total turnover), pharmaceutical (mainly pure liquorice - sticks, powder, etc. - and the co-branded Marvis toothpaste, 30% of turnover) and other food products (spirits, chocolate, pasta, etc. - 10% of turnover). In 1987, the firm was awarded with a gold medal from the Italian Chemical Company for combining modern technology with traditional craftsmanship.

#### *4.1 Presence of family members in management positions and transgenerational value*

The first element that the meetings with Pina Amarelli have highlighted is the strong involvement of the various members of the family in the management of the company and the sharing of its responsibilities.

Since 2003, Fortunato Amarelli (11th generation) is the CEO of the firm, and other family members (formally or informally) help Fortunato in its management, e.g., Margherita Amarelli in marketing and legal activities in Italy and Great Britain, Pina in corporate strategies and public relations, etc.

There is an informal family council (Mrs. Amarelli defined it as “an ongoing open forum for strategic decisions”) that meets each month (sometimes with the support of digital technology, such as teleconference) and at the annual meeting. In some cases, the family council takes a more restricted form, involving only three members of the family (Fortunato,

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<sup>9</sup> Amarelli has an agreement with Eataly (the high-end Italian mall chain operating in the food and wine compartment) to distribute their products in the locations of New York and Tokyo.

Pina and Margherita Amarelli), while in other cases, it is also extended to the members representing the two branches of the Amarelli family (e.g., Marco Amarelli) or family members with no formal roles in the firm (e.g., Pina's husband, Franco Amarelli, and their son, Giuseppe). The idea is that the company is the heritage of the whole family (beyond the individual company's shares) to be passed on to future generations; therefore, each member must give its personal contribution based on its skills and abilities. The involvement of multiple generations is generally considered important in family business research, as "the organization has greater input and a variety of individual perspectives - both valuable assets for entrepreneurial ideas" (Kellermanns *et al.*, 2008, p. 5).

This does not exclude a managerial contribution from the outside, as Pina said: "At a certain point, external assistance is needed in terms of management. But if you have internal resources, it is appropriate to invest in their education and managerial skills development": to underline this, she mentions Fortunato's studies after his degree in Law at the University of Siena: a PhD at the Bocconi School of Management (SDA) and his specialization at the Family Business Center of Loyola University in Chicago.

The first hypothesis seems to be verified, as the presence of family members in top managerial positions is strongly influenced by the aspiration of constantly creating "new" value for future generations. Investments in the development of managerial skills within the family seems to be a constant in the history of the Amarelli family and is motivated by the fact that the values associated with the company - determination, passion and cohesion - coincide with those of the family and are best kept alive by family members. During the interviews, looking at Pina Amarelli's young granddaughter (7 years old), who was already interested in coloring the boxes of licorice, it is not so difficult to demonstrate this desire to pass these values on to future generations.

#### 4.2 *Sustainability as a combination of a unique strategic posture and distinctive resources*

The history of Amarelli starts from the uniqueness of the "raw material" on which the business activity is founded, i.e. the licorice roots that grow wild on the coast of Calabria and have a unique flavor compared to other types of licorice, being 30-40 times sweeter than that growing in other areas of the world (Sodano, 2011). The localization of Amarelli in Rossano is, in fact, connected to the expressed will of the family, which is closely linked to its territory representing from the very beginning, the ideal "pool of resources" for its future entrepreneurial activity. The founder's initial intuition was helped by a wide availability of raw material in the surrounding countryside, but also by his ability to play out the entrepreneurial mission in an outright distinctive way than his competitors.

A historical example is particularly relevant for the point. At the end of the '30s, the high quality licorice from Calabria became a valuable commodity for American businesses as the only sweetener allowed in the pharmaceutical industry. The U.S. confectionery giant, Mac Forber, therefore decided to settle in Corigliano Calabro and purchase large quantities of raw

material, even paying three to four times the previous market prices. Most of the liquorice factories surrendered to this “crazy” rise in prices and decided to close their processing activities and dedicate themselves to other activities. The only family that chose to resist was the Amarelli one who, at the beginning of the war (and after the subsequent departure of the Americans), were one of the only manufacturers of licorice in the area.

This strategic path, however, isn't only characterized by the family's strong tie with tradition but also by its propensity to innovate (Esposito De Falco and Schiavone, 2014), almost instinctive in some way, and its capability to revive the business at critical moments: “Ancestral know-how and the understanding of our specific business allow us to discriminate between good ideas that are worth developing and those which have no chance of success even if they seemed to be attractive”, affirmed Pina Amarelli.

The careful selection of raw materials, the craftsmanship combined with the latest technologies, the constant attention to the quality of the finished product, “soft” innovations relating to the brand and communication (e.g., stylish boxes of metal with ancient images drawn from the family archives of XVIII century) are the roots that underpin the sustainability of Amarelli. Innovation is not only generated by guidance from the various leaders of the Amarelli family, but it is also based on a continuous exchange of knowledge with research institutes, universities, associations (Chirico, 2007), which make it possible to expand the ability of product innovation.

#### *4.3 Transgenerational value and the “enlarged” family*

Not only family members, but also employees have handed down the specific culture of Amarelli from father to son. Non-family employees seem to live with passion their belonging to the “enlarged family” and have seen their role and professional engagement efforts always recognized and exalted by Amarelli's family (Piancastelli, 2004). The firm - Pina Amarelli said - is rooted in specific values: “In an industry you can as much have machinery, equipment and technology as you want. But human capital always remains the most important thing”.

The concept of “enlarged family” thus includes employees first of all, and at its top, the figure of the “maestro liquiriziao” who is the ultimate “guardian” of the company's know-how and guarantees the continuity of its business activities. In addition, it is useful to note that the licorice factory (“concio” in Italian) of the Amarelli family is not only a place of work but also a place of real life: at Amarelli's concio, as narrated by workers for generations, non-family employees ate, got married and had children. The creation of transgenerational value is likely to be linked with selected non-family members that have given their steady contribution to decision-making and innovation processes, as is clear from the words of Raffaele, responsible for maintenance until a few years ago: “Licorice is our factory, we really feel it to be ours. When we were children we used to stay together along with Don Franco (Pina Amarelli's husband), I still

remember the rides and games [...] my greatest satisfaction is to have been able to invent unique, useful machines for the factory. And I told my son: if you want to go to the North [of Italy] that is okay, because there you can learn what working hard means, but then come back, because Amarelli is your home” (Piancastelli, 2004).

Respect and care for non-family members constitute values that remain over time and between generations. Not surprisingly, at the end of the meetings with Pina Amarelli, we also discovered that the wife of an employee of the firm handcrafted natural fiber baskets containing the products in the showroom in Naples.

#### *4.4 Transgenerational value and the quality of local embeddedness*

Upon deeper observation, the enlarged family seems to extend beyond organizational boundaries, involving a hardworking local community that keeps ancient traditions alive thanks to the inventiveness of a family. From the interview and from secondary sources, it emerges that the Amarelli family is a point of reference for Rossano: even the location of Contrada Amarelli (the Amarelli estate), is visible as you enter the small town, which makes us understand the importance and the authority that this family receives from the local community. Since the High Middle Ages, Amarelli’s family was one of the most important ones of Calabria and it has always played a leading role in historical events over time (in fact, documents in historical archives prove that one of its members participated in the Crusades).

Nevertheless, the company’s success in creating strong ties with local stakeholders is also due to its ability to remain independent - except in some specific moments of the history of the firm - from the (influence of) politics of the area, while remaining close to the “social fabric” of the territory. “It is certainly important to respect [local] institutions, with which I mean all the official organizations with which a company like ours has to work, without ever becoming their servants!”, Pina Amarelli claimed.

The quality of local embeddedness does not seem to be represented only by strong ties with local stakeholders but also by the company’s ability to provide “values as a common heritage” to the local community. An example of such attention is the creation of the corporate museum (opened in 2001 after over 15 years of gathering historical pieces), which reports about 40,000 visits a year, making it the most visited corporate museum in Italy after the Ferrari one (Sodano, 2011). The Amarelli family demonstrated great commitment in planning the “Giorgio Amarelli” Licorice Museum with the intent of presenting the story of a unique product closely that is linked to the territory, while showing the tools used for the processing of licorice from the XVIII century to today<sup>10</sup>. It is very noteworthy to find that one of the main rationale behind the creation of the museum was to display a place of tradition and a business model for local schools’ students.

<sup>10</sup> In the corporate museum there is also a historical archive, which is unique among all business archives, containing 9 scrolls (1445-1724), 355 archive units (121 envelopes, 39 volumes and 195 registers) dating from 1445 to 1986. By decree of the Italian Ministry of Cultural Heritage and Activities (20 December 2012), the Amarelli Archive has been declared of “particularly important historical interest”. A stamp was also printed by Poste Italiane to celebrate the museum.



Its entrepreneurial function, on the other hand, is also an expression of territorial humus, that is the institutional frame which outlines the “genetic code” of the entrepreneur, as well as that of the company as a whole (Esposito De Falco, 2012). There are many examples of family firms that were benefited by “dragging” and redeveloping the local area from virtuous economic and social perspective. One of these is Crespi, a Lombard historical family of cotton manufacturers that has supported the improvement of local hospital facilities and routes communications, as well as the creation of venues for the population (Giaretta, 2004, p. 63). The presence of these recurrent elements reveal the potential of family firms that offer services to the community, thus aiming at raising the quality of life of both the family members and the local community (Baccarani and Giaretta, 2010).

In this sense, the territory, or rather the quality of embeddedness of the firm within it, is likely to be a major explanatory factor of the sustainability of this family business. On the other hand, a “territory-product” relationship is able to determine typical characteristics (uniqueness of offer), make the local production more competitive and create strong social bonds that are essential for the well-being of the local community.

## **5. Limitations and conclusions**

In this paper, we tried to extend the existing theoretical debate on family firms by linking transgenerational value creation with sustainability in long-standing firms. In our exploratory model, the family firm that seeks adequate levels of profitability constantly develops its business in accordance with the well-being of its own family in the future and in harmony with the surrounding community and environment, thus pursuing sustainable conditions. The evidence gathered from the Amarelli case study seems to be in line with recent findings in family business research, which have concluded that family members’ commitment and the values that are embedded in the family culture are important drivers of entrepreneurial growth (Corbetta and Salvato, 2012). Moreover, especially in long-standing firms, sustainability can be considered the successful balance between business growth (market niche strategy, employees as extended family, innovation), family control over the evolution of the firm and “anchorage” to the territory (Colli, 2012; Rossato, 2013; Antheaume *et al.*, 2013).

However, there are several caveats that should be considered in our research findings and implications. The limitations of our study concern both the circumstances and specific type of the analyzed firm. Several avenues for further research therefore exist. An additional step will be to investigate deeper into the three elements underpinning sustainability in our model, i.e. success as the degree of cohesiveness of the family; the degree of continuity in business growth; the family’s degree of adaptability to the local community. We are carrying out a research on a sample of



long-standing firms in order to study how these three outcomes relate to sustainability.

Furthermore, it shows off how a family firm can be sustainable. For example, the maintenance of the ability to create value throughout the generations is of primary interest for research in this field of study because an exclusive focus on the creation of wealth in accounting terms is clearly neither the only nor the primary objective of family firms (Gomez-Mejia *et al.*, 2011; Berrone *et al.*, 2012; Yu *et al.*, 2012).

Finally, the systems perspective adopted in this paper seems to be the most suitable option to represent a conceptual complex set of both economic and non-economic goals in which the latter may emerge, in some cases, as a means of achieving a broader sustainable development.

Salvatore Esposito De Falco  
Agostino Vollero  
Sustainability, longevity  
and transgenerational  
value in family firms.  
The case of Amarelli

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**Salvatore Esposito De Falco**  
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Sustainability, longevity  
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**Back to the future**





# The non-existent firm: relations between corporate image and strategy<sup>1</sup>

Back to the future

Claudio Baccarani - Gaetano M. Golinelli

## Abstract

*Increasing competitiveness and changes in social expectations of firms has resulted in a growing interest in the field of the corporate image and its strategic role in the networking management of internal and external relationships. If a firm's image is positive, it may convey cohesion within the organization, and trust, credibility and legitimacy to the stakeholders. The aim of this study of the successful corporate image is to reach a definition for such an image, and possible solutions for improving it. The study concludes that an unequivocal and universal corporate image does not exist. As a result, there are as many images as there are people who interact with a company. Each person's perception is a result of the communication process, their satisfaction and the way they perceive the entire interaction. If a firm pays attention to its image, it should not conform to its interlocutors' requests or attempt to change its stakeholders' expectations; but rather, to express its culture and personality, and on the basis of its shared values, act ethically on the same wavelength as social expectations. On the contrary, if a firm cannot express its identity, it will not be able to have a specific role in society and runs the risk of not surviving in a future context, which, like the current one, is characterized by strong environmental discontinuity.*

*Key words: corporate image; corporate identity*

"What are you doing?" my wife asked, seeing me linger, unusually, in front of the mirror.

"Nothing," I replied. "Just looking at myself, at my nose, here, inside this nostril. When I press it, I feel a little pain."

My wife smiled and said: "I thought you were looking to see which way it tilts."

I wheeled around like a dog whose tail had been stepped on.

"Tilts? My nose?"

And my wife said, serenely: "Of course, dear. Take a good look. It tilts to the right."

I was twenty-eight years old and, until then, had always considered my nose-if not actually handsome-at least quite decent, like all the other parts of my person generally<sup>2</sup>.

Luigi Pirandello, *One, No One and One Hundred Thousand*.

<sup>1</sup> The present contribution was published in issue n. 29 (September–December 1992) on "The economy of immaterial resources (part one)".

<sup>2</sup> This passage is from the following translation: Luigi Pirandello [trans. William Weaver], *One, No One and One Hundred Thousand*, Lightning Source Inc., La Verge, TN, 1992, p. 3.

The formulation of proposals with competitive differentials by firms increasingly depends on intangible resources<sup>3</sup>. Among these, image occupies a prominent position. In fact, firms with a positive image enjoy a series of advantages in their internal and external relationships.

In internal relationships, a strong corporate image fosters a sense of belonging, cohesion and self-esteem in its human resources. For example, those who work for the Ferrari company feel gratified in externalizing it because of the myth that surrounds the company's history and the resulting corporate image, which spreads from the brand itself, regardless of the firm's results in Formula 1 competitions.

There is certainly no need to underline the relevance of this aspect, which takes on important motivational values, as it is crucial for the planning and realization of initiatives aiming at introducing a sense of orientation toward total quality in a company<sup>4</sup>. Moreover, if one thinks of a firm as a community of people who move in a more or less orderly fashion toward a more or less shared goal, rather than a cognitive process of knowledge production by means of knowledge<sup>5</sup>, the magnitude of the importance of image in internal relationships becomes evident as an element of cohesion<sup>6</sup> within a structure that is called upon to entertain intense interactions with its surrounding environment<sup>7</sup>.

Until now we have been referring to the possible impact of a firm's image in internal relationships; now it is necessary to outline the effects of its image on external relationships, intended not in the strictly technical sense of corporate functions, but rather as a network of exchanges and transactions that the firm realizes with the environment with which it interacts.

<sup>3</sup> On this matter, Podestà observes that: "In firms there is no material resource that, in order to be used, does not require a certain amount of immaterial knowledge. On the same token, it is quite improbable that a physical good be purchased, on the market, with exclusive reference to its materiality, be it its service, image or whatever. The client purchases (and also requires) a complex good in which material and immaterial elements are interconnected in an indivisible way. There is more to it. First of all, material resources and output, considered in their pure and simple physicalness, are much more imitable and fungible if they are not 'enriched' with their immaterial elements".

<sup>4</sup> For more on the matter, allow us to refer to Baccarani, "Qualità e governo dell'impresa", *Quaderni di Sinergie*, n. 7, 1991.

<sup>5</sup> A firm may be intended as such if one considers that the "entrepreneurial function and the firm are increasingly characterized by the learning process which, to quote Sraffa, 'produces (new) knowledge as a means of knowledge (pregressa)' in a circularity that is more and more present in the systemic and evolutive theories of the firm." Cfr. E. Rullani, "La produzione del valore attraverso la conoscenza", in *Atti del Convegno, Valori di capitale economico*, op. cit., report summary.

<sup>6</sup> As far as image and communication are considered elements of cohesion among the various corporate functions; see A. Touraine, "L'immagine crea unità", *Il Sole 24 Ore*, 25 ottobre 1990.

<sup>7</sup> In this sense, corporate image contributed to simplifying the management of the company as an expression of the transformation processes of the company's structure. For more on the issue of company management, allow us to refer to G.M. Golinelli, *Struttura e governo dell'impresa*, Cedam, Padova, 1991.

This is the perspective within which the themes of corporate image are usually located, considered in the wide sense of product image, in connection with the brand and differentiation policies, as well as the company's institutional image as an expression of the values that are recognized by its business culture<sup>8</sup>. From this point of view it is possible to see many advantages: one of these consists in the visibility of the company and its products in a communication environment in which the crowding of messages tends to neutralize the effects of communication itself<sup>9</sup>.

Equally important is the firm's acquisition of the ability to easily overcome-albeit within certain limits-the inevitable mistakes that are made in the course of relationship processes. This is one of a firm's protective functions.

However, a positive image most of all entails trust, credibility, legitimacy, and therefore the simplification of consensus-building processes<sup>10</sup>. The relevance of this aspect can be seen by turning one's attention to the ongoing changes in the client-firm relationship. In fact, "the reasons for the exchange have changed ... from being economic they tend to become increasingly psychological. The differential expectations and those of extended functionality postulate, in turn, a reinforcement of the relationship. If companies think of circumscribing their relationship with their *clients* to the economic area, they are mistaken. The *client* in fact has already extended it in terms of expectations, and his or her requests are all extra-contractual compared to the past. He or she wants to be recognized among the others and enjoy privileges and exclusive communication. He or she perceives his or her choice as a preference and thus expects to be preferred in turn. He or she is willing to give trust but demands loyalty in exchange"<sup>11</sup>.

Therefore, firms that enjoy a positive public image have the same advantages as an individual who, in the same situation, endeavors to build a series of interpersonal relations. In other words, a good image makes relationships with external subjects more fluid, particularly in the case of those who look to the firm for some reason, such as stakeholders. Just think of its significance in the "setting up" of relationships among the various independent subjects that participate in a network of firms. Just think of the

<sup>8</sup> This approach is developed by Bernstein, who defines *image* as the perception that a subject has of the *personality* of a company in relation to its transmitted identity, i.e., in relation to the means that are used to make its personality emerge. Cfr. D. Bernstein, *Company image*, Guerini e Associati, Milano, 1988.

<sup>9</sup> For more on the role of image in product identification processes, see L. Anolli, "Il prodotto: uno, nessuno, centomila", *Il millimetro*, ottobre-dicembre 1991, n. 112.

<sup>10</sup> Under this profile, Coda observes that "a strong image and attractiveness constitutes an intangible good of great relevance that positions itself at the centre of critical rings that lead company development, so long as the direction conceives such an image as a powerful but delicate instrument that always generates new consensus. Such consensus must be used with care, like the constant goal of an investment policy or like the focal point of an integrated system of communication that converges on it". V. Coda, "Strategie d'impresa e comunicazione: il legame mancante", *Finanza, marketing e produzione*, n. 1, 1990, p. 71.

<sup>11</sup> Cfr. G. Calvi, "Dimentichiamoci del consumatore: l'appuntamento è con il cliente", *Micro e macro marketing*, n. 1, 1992, p. 20.

role of corporate image in revisiting the relationships between industry and commerce that aim toward forms of increasingly tight collaboration. And one may think, most of all, of the centrality that it acquires in the course of the passage from a contractual vision to a relational vision of its relationship with clients; in other words, from a transaction that is built on the prevailing aspects of short-term economic convenience to one founded on the continuity of exchange relationships. Such continuity is the result of the company's direction toward the transparent satisfaction of requirements that were expressed by the market from a long-term perspective, within which the firm also assumes the social role of safeguarding the client, who is a member of an organized community that seeks to guarantee the preservation of a natural environment and move within the prospect of growing quality of life.

To be clearer, it would be best to recall these concepts. The firm network and the forms of coordination between industry and commerce are organizational models that develop on the basis of structured relationships between firms that carry out different phases of a process. At the basis of the reciprocal selection among the participants first of all we find trust and credibility, followed by, if desired, metaeconomic criteria<sup>12</sup>, i.e., sensations in function of which a “deal is closed” and a “bond” is defined. Therefore, a positive image reflects trust and credibility.

If this occurs during the production process, it certainly also manifests itself in the course of the firm's final exchange with the client. Today, in the course of the exchange the relevance of contractual aspects tends to decrease, with a parallel amplification of the relational aspect founded on the interaction between the identity of the client and that of the company. The client increasingly asks for a personalization of the relationship and for the setting up of services that are capable of “solving one of his problems”<sup>13</sup>. In this sense the client tends to privilege the product's immaterial components, which are considered a group of attributes that produce utility. The security of a relationship based on the trust recognized in the sales partner is certainly co-located among these attributes because of his or her behavior and professionalism.

Here, the advantages that a firm obtains from a positive image have been discussed, underlining the implicit problem of the definition of “positive image” in this context. The time has come to ask ourselves what an image is in order to try to understand how it is possible to attain a positive image. As far as this is concerned, to avoid the risks that are connected with the apparent simplicity of the topic, it would be best to follow an indirect path that is more capable of reaching the definition of corporate image through exclusion or, in other words, by defining first of all what an image is not.

<sup>12</sup> The firm's decision-making process is impacted not only by criteria that explain objective rationality, but also by metacriteria, such as the quality of personal relationships among decision-makers. Cfr. G. Panati, “Premessa: un filo d'Arianna per lo studio delle imprese nel loro contesto”, in G. Panati and G.M. Golinelli, *Tecnica economica industriale e manageriale*, NIS, Roma 1991, p. 99.

<sup>13</sup> As far as this is concerned, see T. Leavitt, *Marketing imagination*, Milano, Sperling & Kupfer, 1985.

From this perspective, it is possible to assert that an “image is not...” the mere effect of promotion and advertising campaigns that are developed for a market, neither is it just the distillation of its marketing mix; rather, it is also the condensation of certain qualities that constitute a distinctive signal for the firm, its remembrance of the past and its idea of the future, as well as its style of presenting itself and remaining on the market<sup>14</sup>. Corporate image is not only the result of a company’s communication process and marketing mix. It does, however, also depend on this.

The definition’s negative form thus highlights the central role of communication in image formation. However, communication, as is well known, occurs between a sender and an addressee, who speak with each other by means of a message that is codified by the former and decoded by the latter in the course of a transfer process that may be obstructed by many forms of background noise. In other words, while the sender believes he is saying one thing, the addressee could—due to many reasons concerning psychological and linguistic factors or the message’s technical imperfection—understand something else. Then again, it is clear that those who receive a message analyze it in function of their expectations and their decoding mechanisms in cognitive, affective and value terms. Thus, apart from the aspect of communication distortion, the same message decoded by different addressees may generate different image perceptions.

Corporate image is therefore nothing more than the perception that “others” have of a company. Corporate image is an invaluable asset for the company and depends not only on the company, but also on the “others”. Thus, corporate image underlines an essential feature of the company’s social connotation. The company, in truth, exists only because it constitutes itself as a subject that interacts with other subjects, defining the positive or negative features of the relationship during this interaction.

The above underlines how an essential aspect of corporate image consists of the conscious use of the various communication channels that the company avails itself of. In fact, companies possess an extensive range of communication channels whose real reach sometimes cannot be measured. Therefore, in order to avoid any possible misunderstanding, it is important to remember that “everything speaks” in a company. This is especially the case in service companies, because they are characterized by their direct contact with clients<sup>15</sup>. Nevertheless, the concept still holds true if it is applied to firms in general, and therefore also to industrial firms. The firm’s structure, neon signs, company personnel, employed media, brand, industrial relationships, relationships with local authorities and financial statements: everything speaks. Clients and various interlocutors of the company speak, and based on their say and their word of mouth, the firm’s corporate image travels. Last but not least, products with the ability to solve the problems that generate the clients’ demand also speak for themselves.

<sup>14</sup> Cfr. G. Panati, “Dal mercato al marketing”, in G. Panati and M. Franch, *Marketing e impresa*, Cedam, Padova, 1987, p. 45.

<sup>15</sup> This concept is well outlined by Eiglier and Langeard, who developed the pleasant example of messages that are received by a couple at a restaurant. Cfr. P. Eiglier and E. Langeard, *Il marketing strategico nei servizi*, McGraw-Hill, Milano, 1988, p. 133 e seguenti.

From this point of view, it is possible to find the space to sustain an argument that must still be verified and might appear paradoxical: in truth, the channel that “speaks less” is that of the media used for commercial and promotional purposes. This claim is further supported if one accepts a scenario of the firm’s future in which roles will be strongly redefined based on the expression of a “real” -and not imaginary-ability to satisfy the demands expressed by a client who is much more watchful and rational in his course of action<sup>16</sup>. This topic is fascinating, but will be dealt with in greater detail on another occasion.

Corporate image, though, is not just the result of a communication activity or of the company’s marketing mix policy: the central element in the management of the corporate image is the quality of what is given to the interlocutor to be evaluated in function of its expected quality. It is in this field that the firm acquires an identity that is not longer the result of an action upon the collective imaginary; but rather, of the expression of the ability to match the quality desired by the company’s various interlocutors. Accordingly, every individual who comes into contact with the company represents a different interlocutor; however, it is possible to work out a classification that generates typical categories that are founded on the essential features that the firm’s interlocutors are expecting from it.

A possible taxonomy divides these interlocutors into nine types<sup>17</sup>, which belong not only to the firm’s environmental context, but also to its very structure. This is in line with the observation that there is a strong informative asymmetry among its various components<sup>18</sup>. Think, for instance, of the range of information that is available to the highest levels of management compared to non-controlling shareholders. Think, furthermore, of the information asymmetry between top managers and the company’s workforce. In this context though, one enters a minefield that we will attempt to avoid, at least in the current discussion. The “mines” consist of the evaluation of the most coherent levels of the workforce’s participation in the overall company decision-making process. Here, value assessments that could make the analysis “restless” could come into play.

This said, it would be best to turn back to the above mentioned classification. It divides the company’s group of interlocutors, or “audiences” into nine groups: the *internal audience* (workforce and shareholders), the *local community* (citizens, authorities, institutions), *groups of influence* (movements safeguarding the consumer, academics, scholars), *commercial interlocutors* (providers, sales force, distributors), *central authorities* (offices in charge of various functions, ranging from

<sup>16</sup> For more on the topic, cfr. P. Kotler, “Le implicazioni del consumerismo per gli uomini di marketing”, *Problemi di gestione*, n. 6, 1976.

<sup>17</sup> Cfr. D. Bernstein, *Company Image*, op. cit., p. 157 and ff.

<sup>18</sup> As far as informative asymmetry as an element at the base of the agency relations that are established among subjects are concerned, please refer to S. A. Ross, “The economic theory of agency: the principal’s problem”, *American Economic Review*, vol. 62, n. 2, 1973; M. Pilati and S. Salvemini, “Il contributo della teoria dell’agenzia allo sviluppo del capitalismo manageriale”, *Giornale degli economisti e annali di economia*, n. 3/4, 1988.

industry incentives to control and taxation), *mass media* (newspapers, magazines, radio, television), the *financial sector* (banks or other institutional investors), *final clients* (consumers or product users) and the *general public* (the local collectivity in which the firm operates).

Claudio Baccarani  
Gaetano M. Golinelli  
The non-existent firm:  
relations between  
corporate image and  
strategy

The firm more or less knowingly “speaks” with all of these subjects, through some of the previously listed channels. However, they all expect something from the firm which, although more evident and pressing in the case of the group of clients, must certainly not be neglected in relation to the other interlocutors. Firm reports recall many cases of companies that have had problems because they neglected their relationships with one or more of the other listed audiences even though they had paid the necessary attention to commercial types of audiences (clients, suppliers and banks). For example, companies have left the market due to the protests of local communities because of the heavy environmental pollution involved in the production process.

It goes without saying that the firm’s first object of attention is the client, who constitutes its most prominent “patrimony”; nevertheless, it would be useful to observe how the expectations of non-commercial interlocutors are gradually assuming more importance in light of reflections on the functions of capitalist firms and on the characteristics of their social legitimization. These characteristics are becoming enriched with specific ethical content, introduced as a correction of a development mechanism based on the intensification of consumption. In such a context, the firm must endow itself with the ability to hear the voice and grasp the words of its non-commercial interlocutors, as well as perfect its ability to listen to the messages of its commercial interlocutors. As a result, throughout the range of different types of audiences, a specific company image that arises from the firm’s ability to satisfy their expectations is formed. Therefore, there is not only one image, but rather as many images as there are interlocutors, or accordingly, as many as there are subjects that interact with the firm.

Indeed, within the range of different clients a multiplicity of images is generated in function of the communication the firm activates and of the assessments that customers make with reference to the relationship between their expected and perceived quality, i.e., in reference to “how they see” and “how they live out” the relationship.

In a passage in Scene II of Luigi Pirandello’s play “So it is (if you think so)”, Mr Laudisi and Mrs Sirelli deal with this topic. May we present it here:

- Laudisi (to Mrs Sirelli): “But whatever you do, do not tell your husband, nor my sister, nor my niece, nor Mrs... [...] how you see me, because, were you to do this, all four of them would tell you that you are wrong while, in fact, you are not at all wrong, because I am really the way you yourself see me. But this does not prevent me, my dear madam, from also being really what I am for your husband, my sister, my niece, and the lady here, Mrs...” [...]
- Mrs Sirelli: “Then do you change for each one of us?”
- Laudisi: “Of course I change, madam! And you do not, perhaps? You do not change?”
- Mrs Sirelli [*precipitously*]: “Ah no, no, no, no. I can assure you that I am never changing!”



- Laudisi: "And neither am I from my point of view, believe me! And I say that all of you are wrong if you do not see me as I see myself! That is not to say that it is not quite some presumption as much on my part as on yours, dear madam".

Soon afterwards Mrs Cini joins the conversation:

- Mrs Sirelli: "So according to you, then, one can never know the truth?"
- Mrs Cini: "My, if we cannot believe even in what we see and touch!"
- Laudisi: "Yes, believe me, madam! And that is why I say: respect that which others see and touch, even if it is the opposite of what you yourself see and touch"<sup>19</sup>.

In interpersonal relationships, there is not just one point of view or one image: rather, there are as many images as the various relationships that exist. For the interlocutor, that image becomes the reality based on which he or she will formulate evaluations and make decisions. If this is typical of interpersonal relations, then it is even more so in relations among organized subjects (the firm and trade unions, for instance) and between organized subjects and individuals (the firm and its clients), since any possible confusion would increase in relation to two aspects: the plurality of the subjects that act within such organizations and the little transparency that they manifest.

It is thus possible to find situations in which a positive image is perceived within a group of equity funders and of suppliers which, on the contrary, could be negative in relation to employees and clients. This is the typical case of situations of market control that are very common in the field of public services.

Then again, it is also possible for banks to form a negative image of firms that have a very positive image for their employees and clients. This is the case for many small and medium-sized companies that are vital and technologically advanced, but weak from a financial point of view, like the numerous companies that find a banking interlocutor that only speaks the language of real guarantees but does not grasp the meaning of entrepreneurship in banking. Therefore, relationships between the firm and the various components of its environment do not generate one image, but rather lead to a plurality of corporate images, and with this, of realities. The resulting profile can be very different from the one the firm believes it possesses.

Furthermore, in this "game" the important thing is not what the firm thinks it is, so much as what the "others" think it is. Then again, is it not true that the firm does not sell what it thinks it sells; but rather, what others think they are buying?

In this context, the firm can risk finding itself at the mercy of its interlocutors. In fact, the multiplying of images could lead it to a situation in which it shows so many faces that it becomes inexpressive or resembles a portrait with deformed, or at least blurred, features. In place of "one"

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<sup>19</sup> These passages are from the following translation: Luigi Pirandello [trans. Mark Musa], *So it is (if you think so) in Six Characters in Search of an Author and Other Plays*, Penguin Books, London, 1995, pp. 147-148.



there can be “many”, and therefore, none. In this case, the firm can materially exist, but in reality not exist at all as a relational subject if it does not possess a specific identity that enables it to act within the spectrum of the natural multiplicity of realities that are perceived by its interlocutors. This may happen when the firm does not have a secure and precise awareness of who it is; i.e., when its company culture does not emerge to the point of revealing a personality that is expressed in a specific company identity. The latter enables the firm to communicate with its various audiences in relation to their different expectations of the firm.

Evidently, this problem becomes increasingly complex as the firm distances itself from “close audiences”, such as commercial interlocutors, and moves closer to “distant audiences”, such as local communities. In fact, the frequency of interactions allows essential, albeit confused, traits of a personality to emerge in everyday routines. When, instead, there is a rarefaction of relationships, in a condition in which communication is often limited to the transfer of “ritual” knowledge, it generates a condition with little transparency; as a result, the firm tends to become inexpressive and, as a consequence, “non-existent”.

It is quite true that the concept expressed here is difficult. The firm, in fact, is still physically present. It may also be competitive or potentially untroubled at a certain moment. However, this will certainly change when, due to external solicitation—which, needless to say, is the rule—it will have to assume a specific role, thus discovering that it cannot do so because it is incapable of expressing its own identity.

A firm without an identity is therefore capable of surviving and prospering in an environment characterized by continuity, whereas it could encounter serious problems when facing conditions of environmental discontinuity.

Our thoughts go, for example, to the range of public services organizations, for most of which not even an artist’s creativity would be enough to trace a profile. They are firms that risk disappearing—being erased—as possible forms of organizations, thus entering the immense area of historical memory. They run the risk of disappearing because they already do not exist and cannot, except in sporadic cases, transmit an identity with a specific role because this identity often does not exist and is therefore decided by the “others” for them. In this case, the political environment decides, and through it, interest groups that aim for the privatization of local public services.

However, it may also occur that a listed company, in a critical moment, be precluded from the formation processes of the values that it expresses because it is completely or greatly inexpressive<sup>20</sup>. This is not to mention the moment in which it is necessary to obtain social consensus for a productive location, manage a company crisis, and so on. The “non-existent” firm could

<sup>20</sup> On this matter, Guatri observes how possible stock underestimates constitute one of the reasons that prevent firms’ access to the stock market. “Especially in this last circumstance (the possible underestimate of stock), in a volatile market like ours that is not very sensitive toward the appreciation of substantial elements of the firm’s assessment, I believe that it seems possible to endow greater weight to it (the other considered variable being loss of reservation). Starting from this goal, the firm’s effort must be more serious and the communication skills that many do not possess must be demanded”. Cfr. L. Guatri, “Relazione introduttiva”, *Atti del Convegno Valori di capitale economico*, op. cit., pp. 16 e 17 del dattiloscritto.

therefore remain on the market until it has to face radical changes, in which case it will run serious risks of seeing its material existence cease as well.

If one considers the increasing competition that will affect markets in the future, but especially if one considers the anxiety that pervades the firm's various interlocutors in relation to a revisitation of the functions that legitimize its existence<sup>21</sup>, then the necessity of realizing, within the company, a process of image management that eludes the restricted areas of marketing and public relations, appears evident. Company image management should be a very part of the competences involved in the strategic management process of the whole firm.

Growing states of competition and changes in the profile of social expectations toward firms therefore require increasing attention to issues of company image. Such attention certainly does not entail a pursuit of the image produced by individual interlocutors, which is impossible. The firm may, in fact, control the development of the state of its corporate image but it certainly cannot abandon itself to the search for a homologous image that is generalized in the minds of its audiences. Also, attention to corporate image does not mean correcting the perceptions of various audiences in a vain and schizophrenic attempt to appear, rather than to be. All this would simply be solved in a further reduction of the visibility of the company, which would thus show no distinctive profile.

In order not to fall into the trap of the evanescent image, entrusted only to the perception of the "others" and not founded on the distinctive traits of its own personality, the company must be able to manifest the values that distinguish it in every instance of contact and with the different audiences with which it interacts. The firm will prosper the moment in which it will be able to spontaneously, and not only deliberately, express itself as a function of the cultural traits that characterize it.

The corporate image springs from the everyday routine of the relationships that each component of the company structure realizes with its interlocutors. Such a routine cannot produce positive results if it does not stem from widespread values that are shared within the organization on the basis of precise *ethical principles* of behavior that are in synchrony with social expectations<sup>22</sup>.

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<sup>21</sup> On the matter, see L. Caselli, "La ri-legittimazione sociale dell'impresa", *Sinergie*, n. 31, forthcoming.

<sup>22</sup> For more on this topic, see M.B. Meznar, J.J. Chrisman and A.B. Carroll, "Responsabilità sociale e management strategico: verso una classificazione delle strategie d'impresa", *Problemi di gestione*, supplemento al n. 5, vol. XIX.

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**Claudio Baccarani**  
**Gaetano M. Golinelli**  
 The non-existent firm:  
 relations between  
 corporate image and  
 strategy

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## **Book reviews**



Gian Italo Bischi, Liliana Curcio, Pietro Nastasi  
(a cura di), **Civiltà del Miracolo**, Università  
Bocconi Centro Pristem - Egea, Milano 2014, pp.  
463.

Una delle più importanti riviste aziendali del secondo dopoguerra porta il titolo di «Civiltà delle Macchine», che nella prima serie, (dal gennaio 1953 al gennaio 1957) e nella seconda (marzo 1957 - marzo 1958) fu diretta dall'ingegnere e poeta Leonardo Sinisgalli (1908-1981), da questi fondata assieme a Giuseppe Luraghi (1905-1991), da poco tempo diventato direttore di Finmeccanica ed entusiasta sostenitore del progetto editoriale che fece della rivista (con uscita bimestrale) la pubblicazione di maggiore prestigio di Finmeccanica, società finanziaria costituita nel 1948 dall'IRI (Istituto per la Ricostruzione Industriale).

Essa veniva a gestire un quarto delle capacità produttive meccaniche dell'Italia, con una notevole presenza nel settore delle costruzioni navali ed in quello della produzione delle armi con un insieme complessivo di ventinove aziende.

Il volume che presentiamo è una ampia rassegna antologica, limitata ai numeri usciti sotto la responsabilità di Sinisgalli, direttore di «Civiltà delle Macchine», che i curatori hanno voluto allestire con il titolo di *Civiltà del Miracolo*, pensando di tradurre la nozione di macchine, figlia della intelligenza dell'uomo, con quella epocale del cosiddetto miracolo economico, di cui le macchine sono state appunto le artefici primarie per l'accelerato e sotto certi aspetti imprevedibile sviluppo industriale avviato in Italia a partire dalla metà degli anni Cinquanta.

Non c'è dubbio che la nascita di «Civiltà delle Macchine» si inquadri nella fase di incubazione del miracolo economico del nostro paese e si può dire che il 1953 è stato un anno significativo non solo perché fu fondata questa importante rivista ma soprattutto perché, tra l'altro, vide la nascita dell'ENI di Enrico Mattei e ci fu l'investimento di molti miliardi, da parte della Fiat, per la costruzione dello stabilimento torinese di Mirafiori. Sempre nello stesso anno fu approvata la legge per lo sviluppo del credito industriale a favore dell'Italia meridionale ed insulare, tutte premesse queste dell'avvio di un inarrestabile processo evolutivo economico-sociale del nostro paese.

Prima di prendere direttamente in considerazione l'antologia *Civiltà del Miracolo* sembra cosa utile fare cenno ad un'altra antologia, la prima in ordine di tempo, della rivista di Sinisgalli, quella curata e pubblicata nel 1988 dall'editore milanese Vanni Scheiwiller in occasione dei quaranta anni di Finmeccanica. Gli articoli selezionati da questa rivista offrono uno spaccato capillare ed articolato dell'insieme di una società che sta cambiando in senso tecnologico ed industriale. Parecchi articoli fanno riferimento alle attività delle aziende statali di Finmeccanica, riguardo alle quali sono indirizzati i contributi divulgativi di noti letterati ed artisti italiani ma anche di uomini di scienza stranieri dell'epoca, che Sinisgalli aveva chiamato come collaboratori

della sua rivista, perché essa, tra le tante in circolazione, trovasse sempre più e meglio, un credito specifico e distinto presso l'opinione pubblica non soltanto nazionale ma anche di quella di altri paesi notoriamente più moderni ed industrializzati del nostro.

Gli articoli selezionati da Scheiwiller furono raggruppati per soggetto, al quale si erano rispettosamente attenuti i singoli collaboratori, quasi tutti personalità di prestigio. I soggetti si possono segnalare secondo il seguente indice tematico: Aerospazio, Agricoltura, Arte, Automobile Cibernetica, Design, Economia, Energia, Fabbrica, Filosofia della tecnica, Fisica e Matematica, Industrie Macchine, Navi, Pubblicità. Altra conferma del prestigio storico di «Civiltà delle Macchine» può essere considerata l'iniziativa di un suo collaboratore, il pittore Achille Perilli, che ristampò a Roma nel 2002 con una ridotta antologia personale intitolata *Gli anni di "Civiltà delle Macchine"* i suoi articoli pubblicati sulla rivista di Sinisgalli.

Nel 2008 uscì a stampa una antologia intitolata *L'anima meccanica. Le visite in fabbrica in «Civiltà delle macchine»* e curata da Giuseppe Lupo e Gianni Lacorazza, che così giustificano la loro fatica editoriale: «Nelle visite agli stabilimenti industriali si raccontano i simboli di un paese in corsa verso il miracolo economico: nasce da qui un nuovo genere letterario, quello della letteratura industriale, che avrebbe prodotto capolavori come *Donnarumma all'assalto di Ottiero Ottieri* e *Memoriale di Paolo Volponi*».

Passiamo ora a parlare della antologia *Civiltà del Miracolo*, edita in occasione del sessantesimo anniversario della rivista «Civiltà delle Macchine», come dichiarano i curatori del volume nella loro prefazione, ricca di molti richiami informativi, tra i quali anche quello pertinente la straordinaria carriera di Sinisgalli nell'ambito del giornalismo aziendale, avviata si può dire fin dal lontano 1937, anno in cui egli fu a capo dell'ufficio «Sviluppo e Pubblicità» della azienda Olivetti. Molto positiva era stata poi per Sinisgalli l'esperienza quadriennale (dal 1948 al 1952) come direttore della rivista «Pirelli», di cui fu fondatore assieme a Giuseppe Luraghi, allora direttore centrale del Gruppo Gomma della società Pirelli. Dalla impostazione generalista della edizione di Scheiwiller l'antologia *Civiltà del Miracolo* riprende soltanto sei articoli, nessuno dalla edizione Perilli, mentre un solo articolo viene riportato dalla antologia di Lupo-Lacorazza.

Sono trentaquattro gli articoli che compongono il volume *Civiltà del Miracolo*, i curatori del quale Bischi, Curcio e Nastasi, docenti universitari di matematica, hanno impostato il loro lavoro antologico sull'indirizzo, peraltro dichiarato nella prefazione, delle discipline fisico-matematiche, a illustrare le quali prevalgono gli interventi di autori molto rappresentativi del versante scientifico della nostra cultura negli anni Cinquanta del Novecento.

La rivista di Sinisgalli si presenta, nell'intento dei curatori di *Civiltà del Miracolo*, come un archivio prezioso essenziale per interpretare non solo il processo in corso della industrializzazione della società italiana, ma anche per richiamare criticamente alla attenzione dei lettori quelle grandi personalità che furono gli inventori e i progettisti del passato, tra i quali il famoso progettista di macchine per così dire avveniristiche che fu Leonardo da Vinci, di cui Vittorio Somenzi parla nel suo articolo



Leonardo restituito, compreso nella prima sezione del volume *Civiltà del Miracolo*, che è in modo significativo intitolata *Maestri*.

In questa sezione compaiono importanti articoli. Segnaliamo subito quello intitolato *Enriques scienziato e filosofo*, perché dobbiamo ricordare che Federigo Enriques (1871-1946) fu esponente di spicco della scuola italiana di geometria algebrica che «in qualità di Presidente della Società filosofica italiana, intendeva affermare che la filosofia e la cultura di una società moderna non potevano prescindere dall'avanzamento delle conoscenze scientifiche, asserto che oggi dovrebbe apparire scontato e neppure possibile di discussione. Solo pochi anni dopo Gentile ministro dell'istruzione avrebbe penalizzato le materie scientifiche nelle scuole riducendone le ore di insegnamento e quindi la dignità con effetti che il Paese paga tuttora, non solo nella ricerca ma di conseguenza nella economia e nella educazione generali dei giovani» (Lamberto Maffei).

Questa riflessione è utile per capire che nell'immediato dopoguerra italiano la situazione, per così dire, della cultura umanistica era forzosamente privilegiata rispetto a quella scientifica e continuava a sussistere, in modo pervicace, il tradizionale conflitto fra le due culture, così definite poi dall'inglese C. P. Snow nel suo celebre pamphlet tradotto in Italia nel 1964. Egli teorizzò come inevitabile la frattura tra il sapere umanistico e quello scientifico, l'unico motore indispensabile quest'ultimo per attivare, secondo Snow, il processo di industrializzazione avvenuto, nel lungo periodo, in Europa, come leggiamo nell'articolo intitolato *La prima e la seconda rivoluzione industriale* che bene caratterizza la prima sezione della antologia e che fu scritto per «*Civiltà delle Macchine*» da Norbert Wiener (1894-1964), celebre matematico statunitense, cui si deve la coniazione del termine cibernetica.

La tesi di Snow fu divulgata, discussa, ma anche contestata a distanza di anni dopo la conclusa esperienza di Sinisgalli in «*Civiltà delle Macchine*», ma si deve tener presente che quest'ultimo era stato invece ben determinato a coinvolgere gli esponenti più autorevoli della cultura italiana sia quella del versante umanistico sia quella del versante scientifico, perché era indispensabile che facessero conoscere tutti insieme le fatiche umanamente debilitanti imposte dal ritmo accelerato del lavoro nelle fabbriche, sorte numerose in una società industriale. A riprova di ciò è sufficiente citare la testimonianza di un famoso letterato, già responsabile della politica culturale dell'azienda di Olivetti, Geno Pampaloni (1918-2001) il cui articolo, del marzo 1953 in «*Civiltà delle Macchine*» intitolato *La fabbrica, casa dell'uomo* era sottoposto all'attenzione del lettore con questo illuminante preambolo: «Bisognerebbe innanzitutto - scriveva Simone Weil a conclusione delle sue esperienze di officina - che gli specialisti, gli ingegneri e gli altri, fossero sufficientemente preoccupati non solo di costruire oggetti, ma di non distruggere uomini».

Dalla seconda sezione intitolata *Fabbriche*, che comprende l'articolo di Pampaloni, passiamo alla terza sezione intitolata *Formazione*, ma dobbiamo continuare a presentare il nostro volume indotti soltanto a sviluppare alcuni accenni sommari. Ora prendiamo a considerare ciò che ci sembra più significativo in quest'ultima sezione: il problema della formazione tecnica e professionale non soltanto delle maestranze delle fabbriche ma anche del

personale preposto alla responsabilità dei più alti livelli direttivi. Questo problema rinviava, in quegli anni Cinquanta, ad una fondamentale ristrutturazione, soprattutto in prospettiva tecnico-scientifica, dell'insegnamento medio e universitario italiano a tutt'oggi solo in parte realizzato ma sollecitato fin da allora da quanto diceva nel suo articolo (L'insegnamento superiore e la crisi dell'istruzione) del settembre 1957 il disegnatore industriale argentino Tomás Maldonado. Questa riflessione aiuta a capire come fosse urgente il tema della formazione scolastica, proprio essenziale nel momento di passaggio da un paese contadino, come era stata l'Italia fino ad allora, ad un paese di avviato sviluppo industriale. Prendendo spunto da quanto abbiamo appena detto, si può affermare che ogni singola sezione di Civiltà del Miracolo è caratterizzata da un tema preminente, suggerito dal titolo dato alla stessa sezione. Nella quarta e penultima sezione (Industria e territorio) infatti il tema preminente è quello che auspica l'indispensabile industrializzazione dei poveri territori dell'Italia meridionale, come leggiamo nell'articolo dello stesso Giuseppe Luraghi, direttore di Finmeccanica (Il Sud non chiede elemosine). A rinforzare la necessaria attuazione di questa svolta epocale, sia sociale sia economica, era intanto già avviata la costruzione della Autostrada del Sole, che avrebbe congiunto l'Italia del Nord con l'Italia del Sud con l'aiuto di uno straordinario apparato di macchine, di cui parla Alberto Mondini nel suo articolo (La più ardua autostrada del mondo) del marzo 1958, nel quale così scrive: «... nel tratto da Bologna a Firenze l'Appennino offre difficoltà asperissime: le squadre attaccano la montagna con le mine e le macchine. In una opera che riassume le più belle tradizioni nostre di costruttori di strade e di ponti, con l'impiego di mezzi modernissimi, per la prima volta siamo arrivati a non improvvisare».

Nella quinta sezione di Civiltà del Miracolo intitolata Design c'è un articolo del 1957 del noto critico d'arte Gillo Dorfles collaboratore di «Civiltà delle Macchine», di cui riportiamo il brano seguente: «L'Industrial Design (ma abituiamoci a dire "Disegno Industriale") si trova, oggi in Italia, in una condizione brillante e precaria, giovane d'anni, privo di scuole, ignorato e trascurato (forse per sua fortuna), dalle accademie, dalle università, dalle stesse industrie, è riuscito però, nel volgere di pochi anni, ad acquistare una notevole reputazione nel mondo. Una reputazione e un prestigio di cui gli stessi italiani non sono del tutto coscienti». Lo dichiarava altrove lo stesso Dorfles assieme ad altri studiosi di comprovata autorevolezza, e si può dunque ripetere che fu appunto merito anche di «Civiltà delle Macchine» se il design trovò una importante affermazione nel mondo della produzione industriale italiana.

Tramite la propria strategia editoriale e divulgativa Sinisgalli per la sua rivista ebbe a disposizione collaboratori convinti e determinati a potenziare le affermazioni del design presso la comunità scientifica italiana, che sviluppò per l'industria l'ideazione e progettazione di oggetti d'uso con il requisito della funzionalità, dell'economia, dello stile ed anche del gusto, per cui si è arrivati a parlare, negli anni Cinquanta, di «bel design italiano». In proposito è stato scritto: «il design, per definizione, è legato al mondo della macchina e della produzione in serie, e dunque dell'industria, ed è evidente che solo il proficuo incontro tra il talento

di un progettista e la lungimiranza di un produttore poteva attivare la complessa fenomenologia dell'industrial design» (Antonio D'Auria).

Sempre nella sezione Design di *Civiltà del Miracolo* un articolo è dedicato al celebre designer Marcello Nizzoli (1887-1969), ma non si può dimenticare il successo del design italiano e ne è testimonianza almeno quella della olivettiana macchina da scrivere Lettera 22 portatile (1950). Nell'ambito del design architettonico non si dice nulla di nuovo nel fare riferimento alle abitazioni per i dipendenti Olivetti a Ivrea (1952-53) ed anche al palazzo adibito agli uffici ENI a San Donato Milanese, di cui si fece promotore Enrico Mattei (1956-58).

Intanto va tenuto presente che nel 1956 si registrò il passaggio di proprietà di «*Civiltà delle Macchine*» dalla Finmeccanica all'IRI, il cui presidente, nel secondo numero del 1957 della rivista, preannunciò quella che sarebbe stata, da allora in poi, la mutata, per così dire, natura della rivista di Sinisgalli. Così egli si esprime a proposito dei futuri numeri di «*Civiltà delle Macchine*»: «Sarà inoltre distribuita una pubblicazione con tutti i dati relativi ai vari settori dell'IRI, perché sia facile per tutti seguire l'attività finanziaria dell'Istituto e lo sviluppo dei servizi e della produzione di cui l'IRI ha la responsabilità nell'economia del paese. Saranno cifre che all'interprete esperto denunceranno, nel movimento dei capitali e delle materie prime, nel progresso delle macchine e nell'incremento della produzione, lo sforzo dei dirigenti, dei loro collaboratori tecnici ed amministrativi e delle maestranze: perché, in definitiva, in questa unione di forze, è sempre l'uomo che domina materia ed energia per creare la propria civiltà».

Dal numero di maggio-luglio del 1958 Sinisgalli lasciò la guida del periodico, evidentemente perché capì benissimo che la sua rivista sarebbe diventata niente altro che un bollettino interno delle varie aziende statali, aggiornato e puntuale fin che si voleva sui molteplici aspetti della produzione e del lavoro delle fabbriche, ma «*Civiltà delle Macchine* non sarebbe più stata quello strumento che «avvertiva la necessità di comunicare a tutti gli uomini di cultura l'importanza di aprirsi al progresso tecnologico e di usufruire delle scoperte della scienza e della tecnica; nello stesso tempo voleva avvicinare tecnici e industriali ai concetti e ai maestri della scienza, dell'arte e della letteratura.

In una testimonianza pubblicata sul «*Mattino*» di Napoli del 10 giugno 1978 così Sinisgalli volle ricordare la sua rivista: «Nessun numero della Rivista finì mai nel cestino: la maggior parte degli abbonati (si stampavano 10 mila copie spedite in omaggio in tutto il mondo ai delegati, ai corrispondenti, ai soci, ai clienti delle Aziende del gruppo) faceva rilegare i sei numeri annuali della pubblicazione la facciata, vale a dire la copertina, ebbero cure particolari. [...] Il giornalismo deve qualcosa a «*Civiltà delle Macchine*»; deve qualcosa anche la cultura che è insieme capitale di idee e capitale di immagini».

Umberto Casari



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*Sinergie Italian Journal of Management*

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**Useful information for readers and authors**



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