

Meta-analysis of firm internal and external actors and their influence on new ventures

Master Thesis
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Graz, May 2011



STATUTORY DECLARATION

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Abstract

An entrepreneur is a person who is able to discover opportunities and exploit them. In order to be successful in the creation of a new venture some factors as technological and managerial skills, economic knowledge and a good network are needed. The entrepreneur in which the study is focused, is a person with technological skills but who is missing most of the other characteristics making difficult the development and success of new ventures. With the aim to help entrepreneurs to understand the most important actors for new ventures, it is created the present study called: "Meta analysis of firm internal and external actors and their influence on new ventures". Then, as it has been said, the main goals are identify which actors have influence on a new venture and how significant is the mentioned influence.

In order to reach the targets, first of all the potentially suitable studies were identified, then a working table was created in order to identify the actors, their influences and the importance of them. Finally, each actor and its influence were evaluated through a five point scale where one was the minimum punctuation and five the maximum.

The results of the meta-analysis identify ten different actors and twenty-seven factors influenced by the mentioned actors. Between them, the most important actors are life cycle, social capital, human capital and venture capitalist. The main factors influenced by the actors are achieving competitive advantage, alliance formation, establishing knowledge, management control systems, management accounting systems and the networking process.

It has to be considered that life cycle has been obtained as one of the main firm actors but it only appears in a couple of papers. Because of that, more papers identifying life cycle as the main actor should be studied in order to assure the result.

The present study also introduces a future line of research and it suggest that the different relationships between the actors should be studied because one of the actors could influence another one.

Acknowledgements

I would like to thank all the members of the BWL institute for my acceptance into the group, especially thanks to my supervisors Andreas Flanschger and Jochen Kerschenbauer for their guidance and supervision. I would like to extend my sincere gratitude to my family and friends. I thank them for providing me with encouragement and hope.

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1 Introduction

1.1 Current Situation

In recent years there has been a growing trend towards the creation and development of companies producing goods and services with high added value and knowledge. Many of these companies are based on technological innovation and are mainly in the areas of informatics, communications, biotechnology, chemistry, electronics, instrumentation, etc. In many cases their origins are in spin-out projects undertaken by universities and technology centres specialized in human resources that have invested in research.

The technological innovation is created through the entrepreneurship process which focuses on the opportunity recognition and the posterior creation of new economic activity through the formation of new organizations. Individual with qualified technological skills may recognize an opportunity or have an idea to create a new high tech venture. However, this entrepreneur may face a problem during the development of the new organization because of the lack of competences in managerial and economic skills.

With the aim of facilitating the creation of new ventures by qualified entrepreneurs, the present study develops a meta-analysis of firm actors and their influence on new ventures of existing literature.

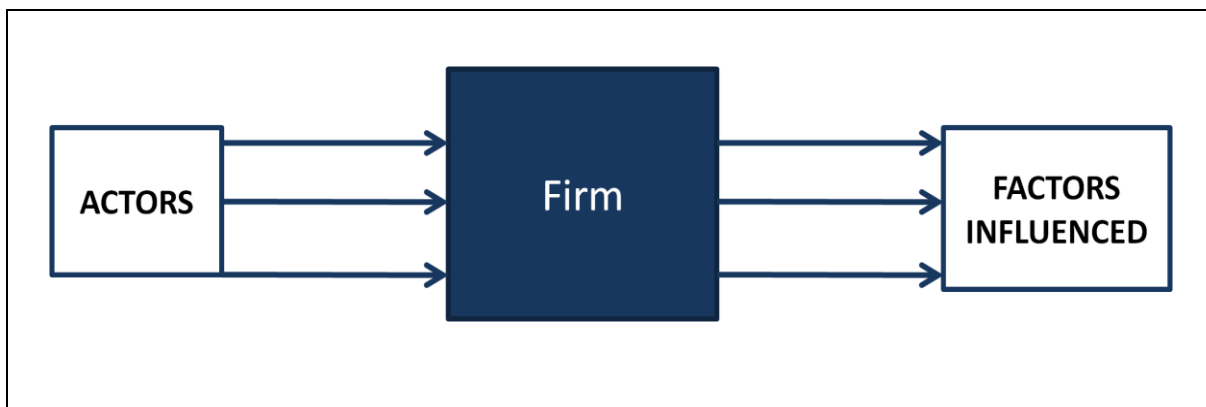


Figure 1: Initial situation

1.2 Objectives

This work has two primary purposes. First, identify which are the internal and external main actors that have influence on a new venture by carrying on a meta-analysis of existing literature. By internal actors it is understood the different factors within an organization such as a business plan or management control systems and by external actors the ones that do not belong to the firm for instance and incubator or a venture capitalists. The second goal is to analyze the importance of the mentioned influence with the aim to recognize the main factors affected by the recognized actors.

1.3 Procedure

From here on, the study is structured as follows. Section 2 gives a brief description of the main theoretical definitions related to entrepreneurship and the creation of new ventures in order to clarify the specific terminology related to the field of analysis. In section 3, the theories of entrepreneurship identified in the meta-analysis are presented. The following section 4 explains the analytical methodology followed in the study. The results obtained after analysis are presented in section 5 and finally, section 6 offers the conclusions of the study, as well as presents issues for future research.

2 Theoretical Definitions

The present study is addressed to the investigation of the actors influencing the creation of new ventures created by entrepreneurs through an entrepreneurship process. First of all it is important to give a clear stated set of definitions in order to have a general idea of the entrepreneurial framework and clarify existing terminology.

2.1 Entrepreneurship

Entrepreneurship is a broad concept which attracts attentions of scholars from various disciplines and which interest has been increased in recent years. Entrepreneurship is related to the exploitation of profitable opportunities into higher rates of return but there is not a prevailed description of the concept even if the literature offers a broad number of definitions. One of the reasons for the absence of an official definition is due to the fact that entrepreneurship can be divided on three main streams of research. The first one focuses on the results of the actions carried by the entrepreneurs (what they do) and it has an economic point of view. The second one is based on the reasons of their actions (why they act) focusing on the reasons of individual actions. Finally, the last perspective is focused on the characteristics of the management, analyzing how the entrepreneurs act.

According to Venkataraman (1997, p. 120), entrepreneurship as a scholarly field *seeks to understand how opportunities to bring into existence “future” goods and services are discovered, created, and exploited, by whom, and with what consequences*. Regarding his definition, entrepreneurship involves the study of opportunities. That is the reason for which entrepreneurial opportunities are the first factor needed in order to develop the entrepreneurship process. Casson (1982) describes entrepreneurial opportunities as those *situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production*. On the other hand, Schumpeter defines entrepreneurship according to the first approach distinguishing the different roles of an entrepreneur (2004, p. 74-75):

We call entrepreneurs not only those “independent” businessmen in an exchange economy who are usually so designated, but all who actually fulfil the function by which we define the concept, even if they are, as is becoming the rule, “dependent” employees of a company, like managers, members of boards of directors, and so forth, or even if their actual power to perform the entrepreneurial function has any other foundations, such as the control of a majority of shares. As it is the carrying out of new combinations that constitutes the entrepreneur, is not necessary that he should be permanently connected with an individual firm; many ‘financiers’, ‘promoters’, and so forth are not, and still they may be entrepreneurs in ours sense. On the other hand, our concept is narrower than the traditional one in that it does not include all heads of firms or managers of industrialists who merely may operate an established business, but only those who actually perform that function

Thus, an entrepreneur is a person who recognizes future opportunities and is able to exploit them.

Next, other factors related to the world of entrepreneurs and entrepreneurship are also defined.

2.1.1 Academic entrepreneur

An academic entrepreneur is *“an academic whose primary occupation, prior to playing a role in a venture start-up, and possibly concurrent with that process, was that of a lecturer or researcher affiliated with a Higher Education Institute”* (Samsom and Gurdon, 1990).

2.1.2 Entrepreneurial opportunities

Eckhard and Shane (2003) define entrepreneurial opportunities as situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships.

2.1.3 Corporate Entrepreneurship

Corporate entrepreneurship or venture management is defined as *“the activity in a corporation that aims at identifying new opportunities beyond the core business or generating new business for the company”* (Veciana, 1996, p.57). The increasing importance of recognizing new business opportunities or developing new products as the result of creativity and innovation needs leads to the emergence of corporate entrepreneurship.

2.1.4 Entrepreneurial versatility

“The instinctive recognition of what will catch on or how to make it catch on, and the sense of timing” are defined as entrepreneurial versatility (Penrose, 1959, p. 36). Entrepreneurs with this quality are able to recognise instinctively what resources are needed and have the capacity to predict when the resource will be required.

2.2 Typology of firms

2.2.1 Spin off

A spin off (or spin-out) is a company created by segregation of a larger original company from a technology which has been developed in the parent organization and transferred to the new company. Spin-offs have their own legal structure and are independent from their original organization.

Depending on the original entity, there are different types of spin-offs:

- University spin-off: Created from universities. They belong to the public sector.
- Institutional spin-off: Created from public research centres that do not belong to university. They belong to the private sector.
- Spin-off or start-up business: They are created from other private companies and belong to the private sector.

2.2.2 Start-up

As it has been seen in the previous definition, a start-up is a type of spin-off with a limited operating history but with a high potential growth. Generally, these companies come from the world of entrepreneurship where the entrepreneur establishes a firm that promotes innovation and technological development. It starts as a creative business idea which immediately is differentiated through innovation. Normally, it is a business with an accelerated growth that attracts business angels.

A company can stop being a start-up for several situations that may occur due to their development such as high profits, move on to the stock market or cease to exist as an independent entity after a corporate merger or an acquisition.

2.2.3 Micro, small and medium-sized enterprises (SMEs)

According to the European Commission (2003), micro, small and medium-sized enterprises (SMEs) are described as follows:

The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million Euros.

Its current definition categorizes “micro enterprises” as the organizations with less than 10 employees, “small” if they have fewer than 50 employees and “medium” those with less than 250 people. However, it is the European definition which is not international. For example, the United States defines small business as those companies with fewer than 100 employees and medium sized with the business with less than 500 employees.

2.2.4 New technology based firms (NTBF's)

There is no clear definition about the concept of new technology based firms. The Arthur D. Little Group gives a narrow definition about the concept which is defined as an independent owned business established for less than 25 years and based on the exploitation of an invention or technological innovation with higher technological risks. However, other authors define them as all the new firms operating in high technology sectors and develop and serve

knowledge and technology intensive products or services. Then, these typology of firms can be characterized by the nature of the firm's products or services, the patenting intensity and the level of employee education/competences (Rickne and Jacobsoon, 1996).

2.2.5 Venture capital firms

A venture capital firm is an investment company that make investments in risky environments but that have a potentially high return on investment. The funding provided by the venture capitalist organization is called venture capital. Normally, these typology of firms focus on investment in technological industries but they also invest in any attractive opportunity.

2.2.6 Firm formation process

A firm formation process is a process in which a founder "*withdraws a certain quantity of means of production from their previous uses and with them carries out a new combination*" (Schumpeter 1934, p. 140).

2.3 Regional cluster

Regional cluster is "*a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities*" (Porter, 2000, p. 16). Elsewhere and from a business strategy perspective, Porter developed the term regional cluster of firms, as a creator of exclusive competitive skills that can be maintained by these firms for an extended length of time across global markets.

2.4 Industrial district

Becattini (1990, p. 39) defines industrial districts as "*a socio-geographical entity which is characterized by the active presence of both a community of people and a population of firms in one naturally and historically bounded area*".

2.5 Strategic alliance

Strategic alliances are cooperative agreements between autonomous organizations with the aim to improve the competitive advantage and long term profitable value for all the

cooperating parties (Hu and Korneliusson, 1997). Some authors characterize strategic alliances as exclusive social-embedded relationships governed by trust¹ and relational contract² (Ring and Van de Ven, 1992).

2.6 Business format franchising

The contractual relationship under which one party (the franchisor) licenses to another party (the franchisee) the right to sell its products or services, using its brand name and operational format is defined as business-format franchising (Azoulay & Shane, 2001)

2.7 Business angels

Business angels are the venture capitalists who provide regionally local seed funding, and who pursue hands-on management practices (Granlund & Taipaleenmäki, 2005).

2.8 Stakeholder

Freeman (1984, p.46) defines stakeholder as *“any group or individual who can affect or is affected by the achievement of the organization's objectives”*.

Stakeholder firms are *“organizations that seek a broad inclusive definition of objectives and optimize a sense of fairness in several stakeholder groups. They claim that for stakeholder firm to be viable over time, it must demonstrate its ability both to achieve the multiple objectives of the different parties and to distribute the value created in ways that maintain their commitment”* (Kochan & Rubinstein, 2000, p.3 70)

2.9 Seed-stage investment

A seed-stage investment is the first stage in the financing of a new venture. It consist of *“a small amount of capital provided to an inventor or entrepreneur to determine whether an idea is worthy of further consideration and further investment. The idea may involve a technology or it may be an idea for a new marketing approach. If it is a technology, this stage may involve building a small prototype. This stage does not involve production for sale”* (Sahlman 1990, p. 479).

¹ Trust is the subjective probability that an individual will perform an action that others expect (Gametta, 1988)

² Relational contract is an incremental process in which individuals increase information and consecutively agree to more and more as they advance

2.10 Early-stage business planning

Sexton and Bowman-Upton (1991, p. 118) defined early-stage business planning as the *“process by which the entrepreneur, in exploiting and opportunity, creates a vision of the future and develops the necessary objectives, resources, and procedures to achieve that vision”*.

2.11 Tangible and intangible resources

An organization possesses two different types of resources: tangible and intangible (knowledge). The former includes money, physical assets and employees. The latter includes knowledge; networks of suppliers, customers, and other stakeholders; and reputation, status and legitimacy (Khairi, 2010).

2.12 Organizational life-cycle configuration

According to Miller and Friensen's (1983, 1984), Organizational life-cycle configurations are defined as distinctive patterns of organizational characteristics at each stage of the life-cycle. It includes strategy, leadership, structure and decision making styles.

2.13 Innovators and Imitators

Schumpeter (1952) distinguishes between innovators and imitators. The former are the people who try to create new organizational forms or new market products. The latter refers to the ones who enter well-established markets.

The two concepts are important terms for the survival chances of new businesses because the strategy followed by the organization is different. During the early stages, innovators have no competition because they are the firsts ones introducing new forms or new products but at the same time the risk is higher and they must establish their legitimacy. Imitators do not have this problem but they have to fight against a heavy competition.

2.14 Structural capital

The concept defines the potentials or possibilities for nascent entrepreneurs' capacity to access information, resources, and support that are critical to venture creation (Liao and

Welsch, 2005). This type of social capital seems to be conducive to cooperative behaviour, hence, facilitating the development of innovation and new forms of organizations.

2.15 Scripts

Scripts are “*observable, recurrent activities and patterns of interaction characteristic of a particular setting*” (Barley & Tolbert, 1997, p. 98). They allow the understanding of institutionalized conditions and legitimating while analyzing the activities occurring during the emergence and evolution of the firm. Therefore, Chaisson and Saunders (2005, p. 748) define scripts as “*mechanisms through which the entrepreneur acts in order to gain legitimacy, competence, or power*”. Elsewhere, Chaisson and Saunders (2005, p. 751) introduce the concept of organizational scripts being “*essentially recipes, borrowed, followed and modified by individuals to get things socially and materially done*”.

2.16 Networks

The study of networks in social capital has two lines of analysis. The first one describes network as the access of individuals to other people with specific resources and their relationship. The second describes social structure (networks) as a form of social capital. Burt (1992) considered both lines to give a general definition of social capital:

Social capital is at once the structure of contacts in a network and resources they each hold. The first term describes how you reach. The second describes who you reach (Burt, 1992, p. 61)

In a network there is information circulating within a group but also between different groups. Nonetheless, findings in sociology and social psychology postulated that this information circulates more within a group than between them. Then, not all the network members receive the same information. Consequently, the more informed a person is, the easier is to discover new opportunities. Burt (1992) describes that information benefits takes place through access, timing and referrals. The players possessing them provide a trustable flow of information that can be exchanged in a network. Trust is a critical factor between relations because competition is imperfect (people only have their own personal contacts) creating different kinds of contacts.

Network expansion allows individuals the access to more information but diversity is an important factor that can disable the network because redundant contacts lead to the same people and does not provide new information benefits.

2.16.1 Structural holes

Structural holes are defined as the separation between no redundant contacts which directly (inexistence of direct contacts between them) or indirectly (contacts that exclude other contacts) are disconnected (Burt, 1992).

The conditions that indicate the presence of structural holes are cohesion and structural equivalence.

From the cohesion point of view, if two contacts are connected through a strong relationship are considered redundant and a structural hole does not exist. The concept is illustrated in Figure 1 where the three contacts are connected to each other providing the same flux of information. The information received by each individual is proportional to the strength of their relationships.

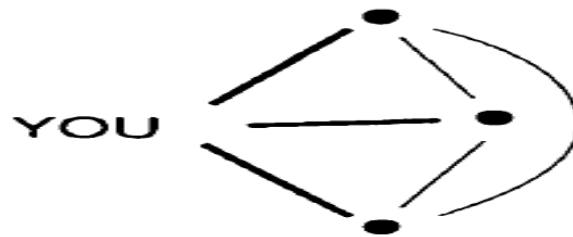


Figure 2: Redundancy by Cohesion (Burt, 2002. p.66).

On the other hand, structural equivalence is a concept defining the fact that two people in a network have the same contacts. This contacts are redundant (existence of indirect connections by mutual contacts) because they always lead to the same sources of information. This concept is illustrated in figure 2 where it can be seen that the three contacts have no direct ties between them but all of them lead to the same sources of information from more distant players.

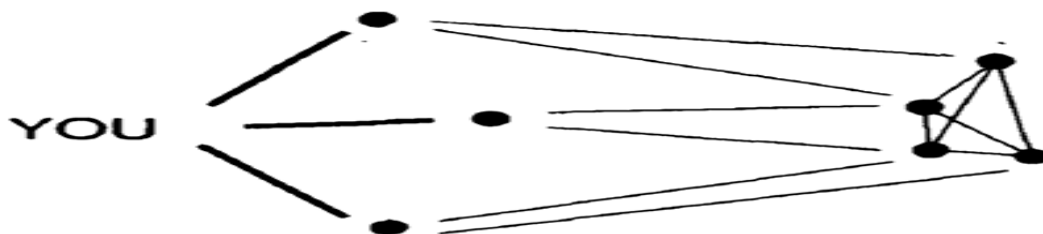


Figure 3: Redundancy by Structural Equivalence (Redundancy by Cohesion (Burt, 2002, p.66).

2.16.2 Weak ties

Weak ties are connections with people from different clusters. For instance, a weak tie could be the relationships with an individual and its less frequent or less close contacts.

Mark Granovetter (1973) postulated the weak tie argument. It is about the strength of the weak ties. He argued that weak ties offer higher opportunity recognition because they provide a higher flow of information between clusters.

2.16.3 Strong ties

Strong ties are the most frequent and close contacts. Examples of this type of ties are family, friends and colleagues. In this study, the definition of strong and weak ties is adapted from Granovetter (1973) who postulated that *“the strength of a tie is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie”* (Granovetter, 1973, p. 1361). However, different authors named the same concept with a different name (see table 1).

| | Terms for strong ties | Terms for weak ties |
|---|---|---|
| Granovetter (1973) | Strong ties | Weak ties |
| Burt (1992; 2000) | Closure networks | Structural holes |
| Krackhardt (1992) | Strong ties | Weak ties |
| Birley (1985) | Informal contacts | Formal contacts |
| Woodward (1988) | A homogeny network | A diverse network |
| Larson and Starr (1993) | Social/affective ties | Economical / instrumental ties |
| Foss (1994) | Kin/friend/strong | Not kin/not friend/weak |
| Johannisson et al. (1994) | Strong/ social ties | Weak/ business ties |
| Greve (1995) | Strong link/ they know each other well | Weak link/ they are somewhat acquainted |
| Ostgaard and Birley (1996) | Strong ties | Weak ties |
| Uzzi (1996) | Embedded ties | Arm's-length ties |
| Bruderl and Preisendörfer (1998) | Strong ties | Weak ties |
| Bryson and Daniels (1998) | Strong ties | Weak ties |
| Aldrich and Sakano (1998) | Strong ties | Weak ties |
| Steier and Greenwood (2000) | Strong/ “count on”/ robust ties | Weak/ diverse/ fragile ties |
| Singh (2000) | Strong ties/ dense network/ homogeneity | Weak ties/ hole rich network/ network diversity |
| Elfring and Hulsink (2001) | Strong ties | Weak ties |
| Havnes and Senneseth (2001) | Strong ties | Weak or non-existing ties |
| Hite and Hesterly (2001) | Strong/ embedded ties | Weak/arm's length ties |
| Jenssen and Greve (2002) | Strong ties/ high redundancy | Weak ties/low redundancy |
| Batjargal (2003) | Strong ties | Weak ties |
| Davidsson and Honig (2003) | Strong ties/ bonding social capital | Weak ties/ bridging social capital |
| Greve and Salaff (2003) | Strong ties/family members | Weak ties |

Table 1: Different terms associated with Granovetter's concept of Strong and Weak Ties (Evald et al, 2006).

2.17 Social embeddedness

Social embeddedness is a term used by Granovetter (1985) to indicate that economic transactions are also affected by noneconomic factors like network ties and social structure. The concept has guided to the acceptance that noneconomic variables (legitimacy, trust, status and reciprocity within networks) influence the organization of the firm and also its performance (Khaire, 2010).

2.18 Liability of newness

The liability of newness is a concept based on the idea that young firms face higher risks of failure than old ones (Elfring & Hulsink, 2003).

3 Theories

There are many theories of entrepreneurship which interpretation influences on the capacity to understand the phenomena. As it can be seen in the annex number 1, the papers analyzed in the present study are based on different approaches. In the present section, the main theories identified during the meta-analysis are briefly presented.

3.1 Contingency-based theory

Contingency theory is a type of behavioural theory which considers that the successful application of a technique or decision in one situation may not ensure success in another. Fiedler (1964) was the first author who spoke about this theory. In his approach group performance is dependent on the manager's psychological orientation and three situational elements: leader-member relations, task structure and leader's power position.

The fourth most important ideas of Contingency Theory could be summarized as follow:

1. There is no universal or one best way to manage.
2. The design of an organization and its subsystems must fit with the environment.
3. Effective organizations not only have a proper fit with the environment but also between its subsystems.
4. The needs of an organization are better satisfied when it is properly designed and the management style is appropriate both to the tasks undertaken and the nature of the work group.

In Figure 3 it is represented the four ideas presented above. As it can be seen, environment and organizational performance are directly related with the organizational subunit. Then, the subsystems must fit the environment and have to be designed to fit with the organization performance.

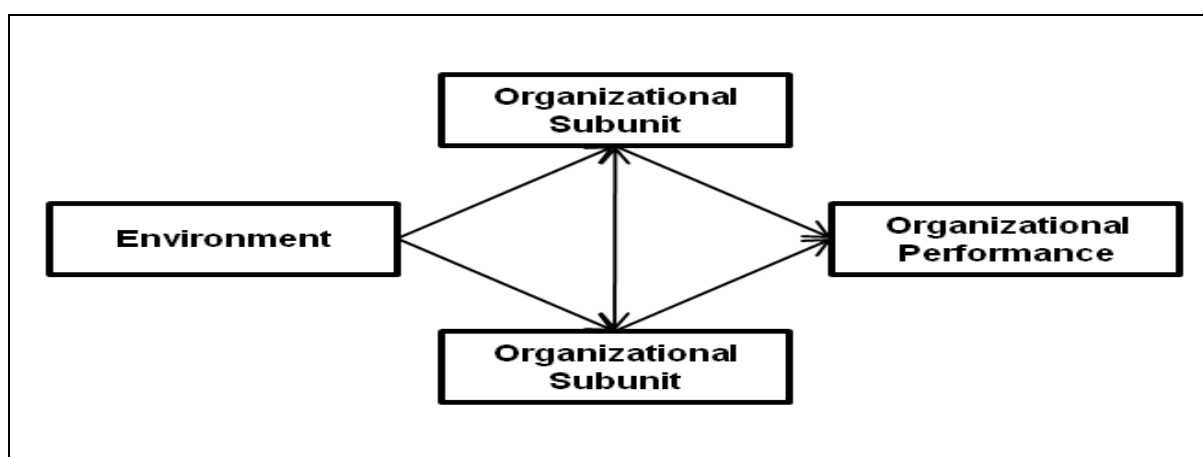


Figure 4: Simplified model of contingency theory in organizational research (Weild et al, 1989).

To put it on another way, the effectiveness of contingency theory of decision making depends on various external and internal constraints (Vroom and Yetton, 1973):

- The importance of the decision quality and acceptance;
- The amount of relevant information possessed by the leader and subordinates;
The likelihood that subordinates will accept an autocratic decision or cooperate in trying to make a good decision if allowed to participate; the amount of disagreement among subordinates with respect to their proffered alternatives.

3.2 Decision-making theory

Decision-making theory is based on the analysis of how individuals or organizations determine an action. The process of decision making includes the establishment of objectives, the collection of relevant information, the identification of alternatives, the establishment of criteria for the decision and the selection of the best option.

There are several theoretical models of decision-making that can be used to the process of decision making, including heuristics and decision trees. However, the identification of them it is not the aim of the present study.

3.3 Evolutionary theory

The evolutionary theory of the firm was originally proposed by Nelson and Winter (1982) who emphasised learning and selection among heterogeneous firms. Consequently, selection operates at an organization's level where some firms survive and others come to an end. It could be compared to Darwin's theory but being applied to the evolution of a firm.

The core of the theory is that organizations perform better at the assignment of self-maintenance in a constant environment than they are at major change, and much better at changing the direction of "*more of the same*" than they are at any other type of change (Douma & Schreuder, 1991, p.159). The key concept for this theory is "routine" which could be understood as the genes of the firm, that is, the elements that will be inherited. Nelson and Winter highlighted two main dimensions of routines: the cognitive and the motivational. The former could be considered as the organizational memory; the latter is related with the control of intra-organizational conflict because a change of routines provoke a conflict which is destructive to the participants and to the organization as a whole (Nelson & Winter 1982, p. 134). Routines can be viewed from another point of view and be considered as targets:

Just keeping an existing routine running smoothly can be difficult. When this is the case, the routine in its smoothly functioning version) takes on the quality of a norm or target, and managers concern themselves with trying to deal with actual or threatened disruptions of the routine. That is, they try to keep the routine under control (Nelson and Winter, 1982, p. 112)

As has been noted, routines are an important factor for the co-ordination of mechanisms but at the same time, the firm has to change and adapt to the changing environment. Then, organizational routines are the depository of organizational knowledge and skills and are needed to change.

3.4 Organizational Ecology

Organizational ecology (or population ecology theory) assumes that environment determines the birth, growth and death of new organizations. It is a theory based on the organizational characteristics and the environmental conditions focusing on the study of organizational diversity. The main focuses of the theory are the investigation of how social conditions have an influence on the following factors (Singh & Lumsden, 1990, p.162):

1. The rates of creation of new organizational forms and new organizations.
2. The rates of demise of organizational forms and organizations.
3. The rates of organizational change.

Generally speaking, the theory postulates that organizations are subject to processes of change due to organizational founding (births) and dissolutions (deaths) and the factors influencing this evolution are the social and environmental conditions.

3.5 Goal setting theory

Goal setting theory is one of the most useful motivation theories in industrial and organizational psychology, human resource, management and organizational behaviour. It holds that motivation plays an important role between goal setting and task performance because with a specific, measurable, attainable and time-bound goal the motivation to accomplish it is higher. Thus, it studies the inseparable link between goal setting and workplace performance

3.6 Human capital theory

Human capital theory is based on the assumption that individuals and society originate economic advantage from investments in people being formal education an important instrument to improve the production capacity of individuals. It maintains that education and knowledge increases the cognitive ability of individuals leading to a more productive and efficient potential activity (Davidsson & Honig, 2003).

Focusing the theory in entrepreneurship development it postulates that people with better human capital should be faster identifying opportunities and exploiting them. However,

Davidsson & Honing (2003) claim that one weakness of the theory is that it assumes that more human capital is always better without considering that a social system may influence individuals to either over-invest or under utilize their investment. Besides, previous investment in human capital may influence life career decisions.

3.7 Institutional theory

Institutional theory tries to explain the reasons for which structures become authoritative guidelines for social behaviour. It postulates that organizational environments “*are characterized by the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy*” (Scott & Meyer 1983, p. 149). Thus, institutional norms require the appropriate operations, organization and criteria of evaluation and external values and beliefs play an important role in their determination. In short, it studies the influence of environmental factors on entrepreneurship.

3.8 Life cycle perspective

The life cycle perspective examines the different stages that organizations go through during their life. Each one of the different stages has different organizational activities and structures.

There are different organizational life cycle models that differ widely in a number of characteristics, between them, the number of stages. Miller and Friesen (1980, 1984) developed the most applied model in which identified four phases: birth, growth, maturity, revival and decline. However, other authors argue that the traditional model does not fit for new economy firms (NEFs) (Granlund & Taipaleemäki, 2005) and justify that the model developed by Victor and Boynton (1998) could be a better option to apply in these kind of firms. This model identifies five different forms of work: craft, mass production, process enhancement, mass customization and co-configuration. Each one of them generates and requires a different sort of knowledge and learning. Progress take place through learning and the leveraging of the knowledge is produced into new types of work that are more effective. Figure 4 represents Victor and Boynton model. In it, craft workers knowledge of products and processes rests in their personal intuition and experience about the customer, the product, the process and the use of their tools (Victor and Boynton, 1998). When solutions are designed, tacit knowledge is created and it is tightly related with experience, technique and tools. Articulating the tacit knowledge, firms may create a typology of system that adapts the knowledge that has been extracted from craft work and reformulated as the best way to work. This articulated knowledge is then used for the purposes of mass production. The target of the process is attempting to codify the best practice in work forms that are open to mass training and control. Also in the change from craft to mass production, progress beyond mass production is possible by the leveraging of knowledge into new and more effective types of work. In mass production settings workers follow instructions but also learn which

ones are effective and which ones are not, leading to new practical knowledge. The leveraging of the practical knowledge derived from mass production creates the work that Victor and Boynton named as process enhancement. This involves setting up team systems that promote the sharing of ideas within the team and collaboration across teams and functions. The new knowledge generated by doing process enhancement work is leveraged and put into action as the organization transforms its work to mass customization. This form of work builds upon process enhancement, as producers or service providers begin to place emphasis on identifying with a high degree of precision their customer requirements. Then, mass customization is based on architectural knowledge. Co-configuration work is orientated towards the production of intelligent, adaptive services or products. As a form of production, it resembles but exceeds mass customization and a product or service is designed at least once for each. In co-configuration products and services undergo constant, ongoing customization over an extended lifecycle. After the last one, the firm can try to renew and go back to the beginning while utilizing the first sources of innovative potential. On the whole, *the selection of the life cycle model should reflect the internal and external operating environment of the organizations to be studied* (Granlund & Taipaleemäki, 2005, p. 23).

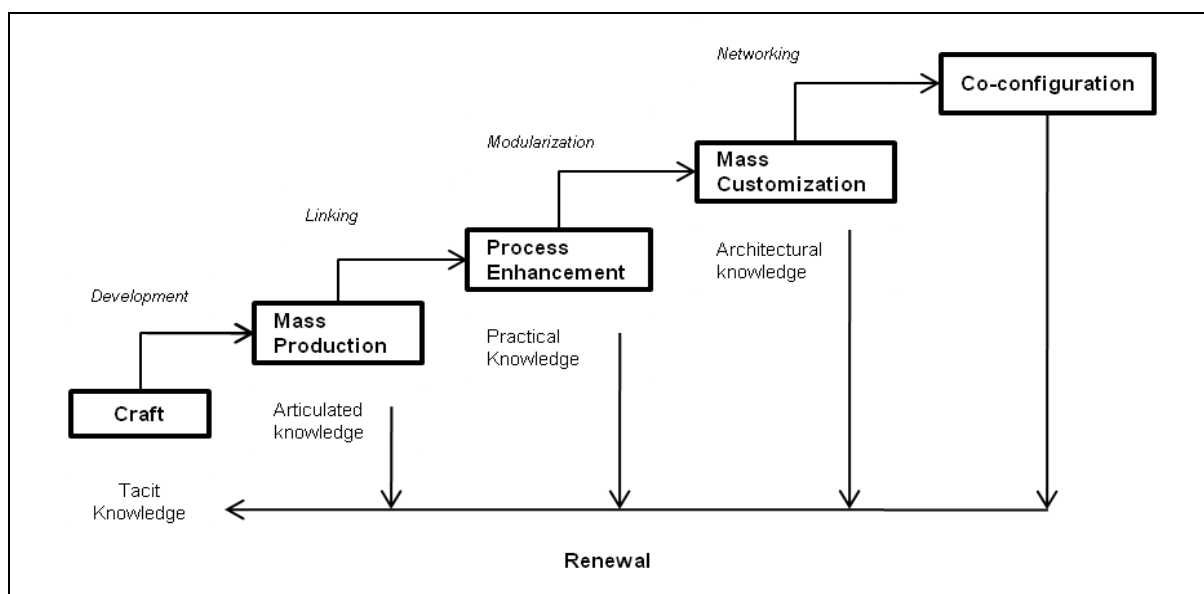


Figure 5: Historical forms of work (Granlund & Taipaleemäki, 2005).

3.9 Organization theory

Organization theory is based on the idea that planning before acting improves most human actions. It also suggests an easier development of new firms thanks to the existence of a business plan for three different reasons (Delmar & Shane, 2003, p. 1167):

1. The identification of missing information without resource obstructions enables a faster decision making.

2. The use of tools for managing the supply and demand of resources prevents the formation of bottlenecks which are time consuming.
3. The identification of action steps allows the achievement of broader goals in an opportune way.

3.10 Prototype theory

Prototype theory was postulated by Rosch (1978) who suggested that with the categorization of objects or descriptions, people match them with their pre-existing mental category which has common representative characteristics. This classification allows that if an object is not an exact replica of a prototype it is still able to be member of the category.

3.11 Resource-based theory

The Resource-Based View of the firm is based on the fact that firms *within an industry (or group) are heterogeneously endowed with strategic resources, and immobility of resources provides sustainable competitive advantage to those firms that posses and develop these resources* (Batjargal, 2000, p. 6).

The foundations of the theory were postulated by Edith Penrose's (1959). She noted that:

A firm is more than an administrative unit; it is also a collection of productive resources the disposal of which between different users and over time is determined by administrative decision. When we regard the function of the private business firm from this point of view, the size of the firm is best gauged by some measure of the productive resources it employs (Penrose 1959, p. 24).

The resource base view of the firm is a theory of competitive advantage. It postulates that organizations have two different sorts of strategic resources. The first ones facilitate the achievement of competitive advantage and the second ones lead to superior long-term performance. Thus, different classes of resources allow the firm to gain more resources or to exchange them in commercial transactions. Those firms that develop the most valuable and rare resources are provided with sustainable competitive advantage and if the advantage is sustained for a long time, the firm is able to protect against resource imitation, transfer, or substitution. Then, firms with *valuable, rare, inimitable and non substitutable resources will be endowed to conceive and implement a value-creating strategy not simultaneously being implemented by any current or potential competitors* (Barney, 1991, p.102).

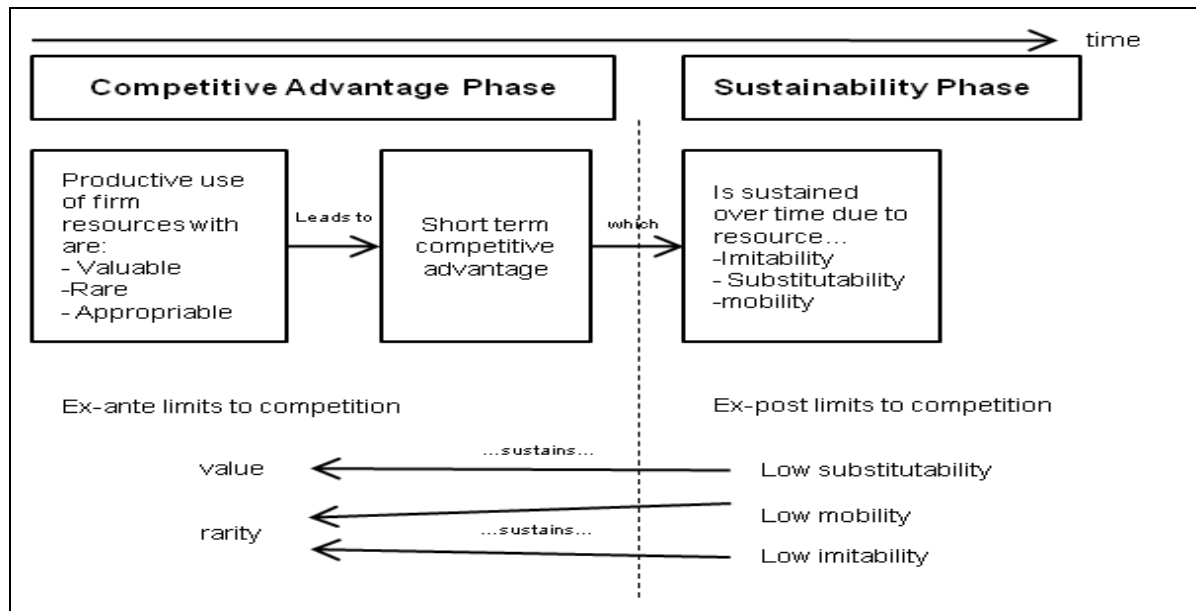


Figure 6: The Resource-based view over time (Wade & Hulland, 2004).

3.12 Signaling theory

Signaling theory is based on the assumption that individuals do not receive information at the same time (information asymmetry). It is used to describe the behaviour of two parties when they access to different information and one of them has to decide whether and how to communicate (or signal) the information and the other one has to interpret the signal.

3.13 Social Capital theory

Social capital theory is based on the ability of individuals to obtain benefits from their social structures, networks and memberships (Portes, 1998). It postulates that besides economic-driven contractual relationships, important socially driven dimensions also need to be taken into account. It seeks to understand the social capital investment decision of individuals.

3.14 Social embeddedness theory

Social embeddedness is defined as the *degree to which commercial transactions take place through social relations and networks of relations that use exchange protocols associated with social, non-commercial attachments to govern business dealings* (Uzzi, 1999, p.482). The social embeddedness theory tries to explain the reasons why economic transactions become embedded in social relations that differentially affect the assignment and evaluation of resources.

3.15 Social network theory

Social network theory views social relationships in terms of nodes and ties being nodes the individual actors within the networks and ties their relationship. It explains that between nodes it is possible to have many types of ties which can be represented through a network map where all the important ties between nodes are represented.

The theory is based in the assumption that the interactions between ties and actors within the network are more important than the individual attributes of the actors. Then, this theory discusses the connection and relationship in a social structure.

3.16 Transaction Cost Theory

Transaction cost theory presents the creation of new firms on the basis of the transaction costs. The theory point out that transaction costs determine which is the most convenient structure for governance (either at an individual or corporate level) and the degree of vertical integration of the firm. The mentioned structures could be one of the following options:

- 1) Hierarchical alternative : The creation of a new firm
- 2) Market alternative: Sale of the new idea or project
- 3) Networks or alliances: Hybrid forms

3.17 Upper Echelons perspective

The Upper Echelons Perspective was introduced by Hambrick and Mason (1984) and the line of study focuses on the top management team (TMT) of the firm and their background characteristics (age, education, experience, etc.) in order to understand its behaviour. The mentioned author empathise the importance of the background characteristics to develop the theory because *“the cognitive bases, values, and perceptions of upper level manager are not convenient to measure or even amenable to direct measurement”* (Hambrick & Mason, 1984, p. 196). Equally important is the study of the TMT as a whole, which *“increases the potential strength of the theory to predict, because the chief executive shares tasks and, to some extent, power with other team members”* (Hambrick & Mason, 1984, p. 196). Then, the combination of the TMT characteristics and environmental conditions influence the strategic choices of organizations concluding that *“organizational outcomes can be partially predicted from managerial backgrounds”* (Hambrick & Mason, 1984, p. 447).

3.18 Structural hole theory

Structural hole theory was first formulated by Burt (1992) who describes the extent to which the social structure of a competitive arena contains entrepreneurial opportunities for individual players to affect the terms of their relationships.

The principal qualities that characterize the theory are the following ones (Burt, 1992, p.83):

1. Competition is a matter of relations, not player attributes: The unit of analysis in which structural holes have their causal effect is the network of relations that intersect in a player.
2. Competition is a relation emergent, not observed: Competition develops in structural holes (invisible relations of non-redundancy), relations visible only by their absence.
3. Competition is a process, not just a result: The social structure of competition is about negotiating the relationships on which competitors survive. Structural holes determine the extent to which, and manner in which, certain players have a competitive advantage in the competition process
4. Imperfect competition is a matter of freedom, not just power: the argument is a theory of competition made imperfect by the freedom of individuals to be entrepreneurs.

3.19 Knowledge based theory of the firm

The Knowledge-based theory of the firm lays on the foundation that knowledge is the most important and significant resource of the firm. Different authors supporting the theory, argue that the major determinants of sustained competitive advantage and superior corporate performance are determined by heterogeneous knowledge bases and capabilities among firms. Therefore, a distinctive organizational competence for firms is the ability to interact and share knowledge with other firms.

4 Analytic Method

The present section presents the methodology developed to carry on the research. The study was designed to be a meta-analysis. Glass (1976, p.3) defined meta-analysis as follows:

Meta-analysis refers to the analysis of analyses. I use it to refer to the statistical analysis of a large collection of results from individual studies for the purpose of integrating the findings. It connotes a rigorous alternative to the casual, narrative discussions of research studies which typify our attempts to make sense of the rapidly expanding research literature.

The rationale for making this choice was the allowance of the method for obtaining an integrated review of findings which are more objective and precise than a traditional narrative review. Then, to carry on the present study, several research papers were collected, codified, interpreted and analysed.

The following subsection explains the process followed to obtain the literature and how the strategy was selected. After that, the actors are defined and finally, the last section describes the factors influenced by the actors.

It is important to point that some of the actors are also considered as factors influenced by the actors. It is the case of alliances and management control systems. In these cases does not exist a direct connection between actors and influences with the same name (it will not make sense). However, a given actor can influence another one. Hence, a future line of research could be the study of the relations between the different actors.

4.1 Literature search and selection strategy

The literature used in the analysis was obtained from a data base where more than 160 scientific papers on entrepreneurship and creation of new firms were found. It has to be mentioned that all the studies were obtained from several international databases and were store in "RefWorks", an online tool that enables researchers to organize and manage the research data.

First, a large number of potentially suitable studies on the previously mentioned database were identified. The papers were organized basically in four folders under the topics of incubator, life-cycle, networking and business plan. There was another folder mainly with studies about Management Controls Systems and Management Accounting Systems. All the studies previous to year 1990 and the ones that were not interesting for the analysis were disregarded and finally, ninety papers were analyzed.

Second, a working table was created with the aim to identify, from each paper, the main actor that influences a firm, which is the factor influenced by the mentioned actor and how it is measured. Besides, the importance of each measure was also reported (see Table 2).

| Paper | Author | Date | Actor | Factor influenced | How is it measured? | How significant is the influence? |
|-------|--------|------|-------|-------------------|---------------------|-----------------------------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

Table 2: Working table used to analyze the scientific papers.

In a further step and once the 90 papers were analyzed an Excel file was created with the intention of evaluating each actor and his influence as well as the importance of each measure (see Annex 2). In order to carry on the evaluation, a five point scale was used where 1 was the lowest value and 5 the maximum (see Table 3). To give a value to each factor influenced by the actor it was taken into account the information listed on the working table and where it was registered how significant was the influence. In the same file it was also recorded the number of citations not only for the actors but also for the different types of influences that the actor can cause. To make it easier, an illustration is presented. Table 3 represents the procedure followed to evaluate each actor and factor. As an example, Actor 1 is mentioned ΣQ times and its final value is equal to the addition of all the values of each paper that mentions this actor (ΣV). In order to calculate the importance (either for the actor or for the factors influenced by the actors), as they can be mentioned different times, it is calculated dividing the value obtained from the evaluation (ΣV) between the number of citations (ΣQ). This methodology is represented in Table 4.

| | ACTOR | | | | | | | | | FACTORS INFLUENCED BY THE ACTORS | | | | | | | | | |
|-----------|------------|------------|----|----|-----|----|----|----|------------|----------------------------------|-----|---|---|---|---|---|---|---|--|
| | A | A2 | A3 | A4 | ... | F1 | F2 | F3 | F4 | F5 | ... | | | | | | | | |
| Paper X | Q | V | | | | Q | V | | | | | | | | | | | | |
| Paper 1 | | 0 | 0 | 0 | 1 | 3 | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 | | |
| Paper 2.1 | | 0 | 1 | 2 | 0 | 0 | 0 | | 0 | | 0 | 1 | 2 | | | | 0 | | |
| Paper 2.2 | | 0 | 1 | 2 | 0 | 0 | 0 | | 0 | 1 | 2 | | 0 | | | | 0 | | |
| Total | ΣQ | ΣV | 1 | 4 | 0 | 1 | 3 | 0 | ΣQ | ΣV | 1 | 2 | 0 | 1 | 2 | 1 | 4 | 0 | |

Q = Quantity (number of citations) V= Value obtained from the evaluation (1-5)

Table 3: Working table used to evaluate each actor and its influence (see Annex 2).

| ACTOR | IMPORTANCE | FACTOR INFLUENCED BY THE ACTOR | IMPORTANCE |
|---------|-----------------------------------|--------------------------------|-----------------------------------|
| Actor 1 | $\frac{\sum V_{A1}}{\sum Q_{A1}}$ | Factor 1 | $\frac{\sum V_{F1}}{\sum Q_{F1}}$ |
| Actor 2 | $\frac{\sum V_{A2}}{\sum Q_{A2}}$ | Factor 2 | $\frac{\sum V_{F2}}{\sum Q_{F2}}$ |
| ... | ... | ... | ... |
| Actor n | $\frac{\sum V_{An}}{\sum Q_{An}}$ | Factor n | $\frac{\sum V_{Fn}}{\sum Q_{Fn}}$ |

Table 4: Methodology followed to calculate the importance of actors or influences.

During the evaluation some of the scientific papers were disregarded because the data obtained was not suitable for the study. Thus, the analysis was concluded with a total of 62 studies. Nine of them contained multiple samples providing 73 usable data actors.

Later, it will be shown that some of the actors are also considered factors influenced by the actors. It is the case of alliances and management control systems. In these cases, it is important to clarify that does not exist a direct connection between the actors and influences with the same name (it will not make sense). But it is true that a given actor can influence another one. Hence, in the future, it could be interesting to study the relations between the different actors.

4.2 Actors

Based on the extensive literature review, ten actors were identified as the ones influencing on a new venture:

- Social capital
- Business plan
- Human capital
- Incubator
- Venture capitalists
- Moral support
- Knowledge
- Management Control Systems (MCS)
- Interfirm alliances
- Life cycle

However, during the analysis, some other factors were categorized as actors but finally were considered to be included in one of the ten mentioned groups. As an example, at the

beginning firm strategy was considered as an actor (paper 50). By the same token, the initial actor identified in studies number 17 and 39 was legitimating activities. In both examples, as the importance of the actor was low, it was decided to include them under the label Business Plan. Similarly, Human capital includes the partial actors top management team (paper 23) and experience (paper 18.2). Interfirm alliances comprehended corporate boundaries (paper 45) and management control systems enclose management accounting systems (paper 37). Also, the actor knowledge encloses shared cognition (paper 22).

At this point, it is important to define each one of the actors in order to understand what is understood in each case.

4.2.1 Moral support

The actor moral support refers to the affect received by individuals, understanding affect as the feelings, emotions and moods that individuals experience. Research has proved that affect influences entrepreneurship in different ways. As an example, it influences the recognition of opportunities, the acquisition of essential resources (financial and human) and prepossesses the capacity to respond quickly and effectively to rapid change in highly dynamic environments (Shane, 2003).

4.2.2 Business Plan

A business plan is a document in which the general purpose of the business is explained. It includes technical, organizational, financial and mercantile studies such as marketing channels, pricing, distribution, engineering, organization chart, financial evaluations, financial assessments, funding sources, the personal needed and the selection method, the philosophy of the company, the legal aspects and the exit plan.

Normally, it is formulated when business man, executives or entrepreneurs attempt to start a business. In this case, it is used for the planning and management of the company. Another purpose is to convince third parties, such as banks or investors, to invest in the business.

The definition of business plan used in the research is the one given by Stevenson and Van Slyke (1985) who define business plan as a document that summarizes how an entrepreneur will create an organization to exploit a business opportunity. Other authors define business planning as those efforts by firm founders to gather information about a business opportunity and to specify how that information will be used to create a new organization to exploit the opportunity (Castro-Giovanni, 1996).

4.2.3 Human Capital

Human capital is a broad concept that encloses may different types of investment in human beings. It is constituted for the labour of an enterprise and it is one of the most important and basic resources within the organization because it develops work and produce goods or services in order to satisfy the needs of the market.

The work performed by human capital can be manual or intellectual. In the present study, the human capital considered is the intellectual one. Then, the main aspects of human capital

have to do with the knowledge and skills represented in people and acquired through education, training and experience which are useful in the development of new firms. However, even if the definition of human capital includes knowledge, this paper considers knowledge as an independent actor and it is not labelled under the actor human capital because several of the papers which have been analyzed, did not speak about human capital in general but knowledge.

4.2.4 Incubator

A business incubator provides business and technical assistance to start-ups in order to support and accelerate the development and success of the firm. It provides services, financing, resources and support to the new venture as well as the promotion of entrepreneurship. Grimaldi and Grandi define the incubation concept as follows (2005, p. 111):

“The incubation concept seeks an effective means to link technology, capital and know-how in order to leverage entrepreneurial talent, accelerates the development of new companies, and thus speed the exploitation of technology. Incubators assist emerging businesses by providing a variety of support services such as assistance in developing business and marketing plans, building management teams, obtaining capital, and access to a range of other more specialized professional services. In addition, incubators provide flexible space, shared equipment, and administrative services.”

The European commission (2002) offers a narrower definition for the concept:

“A business incubator is an organization that accelerates and systematizes the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including: Incubator space, business support services, and clustering and networking services” (European Commission, 2002, p. 9).

Not all the incubators offer the same services to the hosted ventures. Depending on the services offered, Grimaldi and Grandi (2005) have classified them in four different types: Business Innovation Centers (BICs), University Business Incubators (UBIs), Independent Private Incubators (IPIs) and Corporate Private Incubators (CPIs). However, all the categories have something in common that characterizes the incubator. It offers shared office space to the ventures; it is a pool of shared support services allowing the reduction of overhead costs. It also provides business support and advice to the firms hosted (Berkel & Norrman, 2008).

Another concept similar to incubator is Science Park. There is no official definition to describe the idea and similar terms are used to illustrate similar concepts, indeed, Business Park, Technology Park, Research Park, etc. Although several authors have attempted to give a clear definition for each of the mentioned labels in the present study there is no distinction

between them and all the categories are generalized under the actor incubator which is considered a groundwork that supports and raises the establishment and development of new ventures providing access to affordable office space and complementing the social, human, financial physical, technological and organizational resources of the incubates.

4.2.5 Interfirm Alliances

The actor Interfirm Alliances defines the cooperation to perform business activities between independent firms with the aim to achieve a common goal. This cooperation may be connected to technology, products or resources and may facilitate the exchange of goods. In particular, the definition of interfirm alliances used in the present study is from Schermerhorn who defines them as *“the presence of deliberate relations between otherwise autonomous organizations for the joint accomplishment of individual operating goals”* (1975, p. 847).

4.2.6 Knowledge

Knowledge could be defined as a group of information which has been stored through learning and experience (a priori) or introspection (a posteriori). It plays a critical role in intellectual performance, assisting in the integration and accumulation of new knowledge, as well as integrating and adapting to new situations. It can be classified into different categories but in the present study, two types of knowledge are considered: the component knowledge and the architectural knowledge.

Component knowledge consists of *“those specific knowledge resources, skills, and technologies that relate to identifiable parts of an organizational system rather than to the whole”* (Tallman et al, 2004, p.264). On the other hand, architectural knowledge is *“the structures and routines for coordinating and integrating the component knowledge into patterns for productive use and for developing new architectural and component knowledge”* (Tallman et al, 2004, p. 264).

4.2.7 Life cycle

As we saw in section 3 life cycle is defined as the different stages that an organization goes through. All the organizations should have the capacity to recognize in which stage are located in order to identify the influences that it may have on the venture. However, the research focuses on the creation of new ventures, then, during the analysis of the papers, only the first stages were taken into account.

4.2.8 Management Control System (MCS)

Management Control Systems (MCS) are useful tools that provide information in decision making, planning and evaluation. The MCS is composed of several control systems that work together. Simons (1994, p. 5) define MCS as *“formal (written and standardized) information-based procedures and statements, used by managers to monitor and influence the behaviour and activities in a firm”*. This study defines a management control systems as the systems

that collects and uses information in order to evaluate the performance of different organizational resources such as human, physical, financial and also the organizational strategies of the whole organization.

Management accounting systems (MAS) are included under the management control system label. In fact, MAS are a subset of MCS focusing on the financial aspects of the organization.

4.2.9 Social Capital

Social capital is a term used to describe “*the instrumental benefits of social relationships*” (Aldrich, 1999, p.81). It is the actor that includes the actual resources that individuals achieve from their ties in social networks as well as the potential resources that these networks can offer. To put it in another way, it is constituted by individuals and collective social networks, ties and structures that improve the condition of the individual to access to information and know-how form the social capital. Their importance is due to the fact that individuals have the allowance to obtain resources that otherwise would not be available to them. To value of social capital is determined by the network position, the strength of the ties and the social resources (Lin, 1999).

Accordingly, social capital includes networking and strong and weak ties. In a more detailed analysis, the different concepts could be analyzed as an actor, but in order to simplify the results I decided not to distinguished them and just let them as a part of social capital.

4.2.10 Venture Capitalists

Venture capitalists are active investors that take equity positions in ventures that might otherwise be unable to acquire adequate financing (Arthurs & Busenitz, 2006, p 197).

To put it in another way, venture capitalists are individuals who invest in a business venture and provide the capital for start-up the business or expand it. They expect a higher rate of return than traditional investments would give. Their experience in investing in entrepreneurial ventures allows them to assist entrepreneurs with strategic issues. It is important to clarify the difference between venture capitalists and business angels. The former is a professional investor who manages their own funds and is looking for suitable investments. The later is also an investor who is looking for a suitable investment and for a personal opportunity.

4.3 Factors influenced by the actors

Once distinguished between the different actors, it has been identified which is the influence that each one has during the creation of a new venture. Twenty-seven different influences related to the ten actors mentioned in the previous section were computed. From that fact, the influences recognized are the following ones: achieving competitive advantage, acquiring legitimacy, alliance formation, capacity to tolerate stress, discover opportunities, establishment of a firm, establishing knowledge, financial resources, firm cohesion, firm

strategy, generate employment, growth of start-up companies, innovation, interfirm cooperation, management control systems, management accounting systems, markets, networking, organization, performance, product development, risk decision, securing resources, selection of a firm, success, survival of new firms, transaction costs. Next, a brief description of each factor influenced by the actor is provided.

4.3.1 Achieving competitive advantage

In the present study, achieving competitive advantage is considered as the processes through which a business entity obtains strategic advantages over its competitors within a contending industry. It seems that the firms which achieve competitive advantage obtain a better position within the business environment.

4.3.2 Acquiring legitimacy

The influence of actors in acquiring legitimacy refers to the effect that they have on the perception that people have in accepting principles, norms, rules, standards and ways of performance (Delmar and Shane, 2004). The literature distinguishes two types of legitimacy: the cognitive and the socio-political. The former refers to the level of public knowledge about the organization. The later is the “*extent to which key stake-holders, the general public, key opinion leaders, and government officials accept the new venture as appropriate with respect to existing norms and laws*” (Ensley & Hmieleski, 2005, p.1093), in other words, the moral and regulatory acceptance.

Legitimacy is important because the loss of acceptance will drive to the loss of socio-political legitimacy and individuals will avoid the business or product. Another definition of legitimacy is the one provided by Scuhman (1995, p.574). She defines legitimacy as a “*generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions*”. It is important to emphasize that the acquisition of legitimacy is a social resource on new venture growth that can be obtained.

Therefore, acquiring legitimacy is a firm-level social resource on new venture growth that can be acquired by imitating the structures and activities of established firms where strong ties have an important role. It also implies the acquisition of status which can be obtained by the affiliation with high status entities (Khair, 2010).

4.3.3 Alliance formation

Alliance formation refers to the process in which a firm agrees to cooperate with other firms in order to achieve corresponding goals. The relationship is established for a specific purpose which normally reduces costs and improves customer services.

4.3.4 Capacity to tolerate stress

The capacity to tolerate stress is the aptitude that individuals have when they have to work under tension or pressure.

4.3.5 Discover opportunities

Eckhardt and Shane (2003) define entrepreneurial opportunities as situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships. Alertness is a concept related to the recognition of opportunities. It is defined by Gilad, Kaish and Ronen as the *“unique preparedness to recognize opportunities when they appear”* (1989, p 48). Other authors (Hills & Shrader, 1998) define the concept as the efforts to identify potential opportunities.

4.3.6 Establishment of a firm

The influence on the establishment of a firm refers to all the processes needed to set up an organization.

4.3.7 Establishing knowledge

Establishing knowledge refers to the process in which the human capital of the firm acquires knowledge which is necessary to transform an idea into an organization. Knowledge can be obtained by formal education, experience or informal training.

4.3.8 Financial resources

The influence on financial resources refers to the effect that the actor have in obtaining funds for the organization.

4.3.9 Firm cohesion

The factor firm cohesion is related to the influence that the identified actors have on the act, process or condition of cohering an organization.

4.3.10 Firm strategy

Firm strategy is defined as the bridge between a set of goals or policy and a set of actions to obtain them. It provides a general guidance in order to achieve the aims of the organization. Thus, it includes the main competencies of the organization, the resource deployments, competitive methods and frame of operations at either the business unit or corporate level (Sharma & Chrisman, 1999).

4.3.11 Generate employment

Effect on generating employment refers to the influence that an actor has in the creation of work or occupation.

4.3.12 Growth of start-up companies

The influence on the growth of a start-up company refers to the effect of a given actor in the increase of cash flows or earnings.

4.3.13 Innovation

The effect that actors have on innovation refers to the consequences that they have on the renewal or improvement of a service, product or process. Within a company, the innovation process goes from the generation of ideas, going through a viability testing and finalizes with the commercialization of a product or service. It is important to explain that invention is distinguished from innovation. The former brings something new into being and the latter brings something into a new use (Rogers, 1962).

4.3.14 Interfirm cooperation

Interfirm cooperation is defined as the collaboration between business organizations with the aim to accomplish common goals more effectively. It is not include in alliance formation because interfirm cooperation focuses on the influence that a given actor does in the cooperation of different firms and alliance formation focuses on the process to create the alliance.

4.3.15 Management control systems

The influence that an actor has on management control systems refers to the influence that a given actor has on its adoption or application.

4.3.16 Management accounting systems

As it the case of the previous factor, the influence that an actor has on management accounting systems refers to the effect that it has on its adoption or application.

In this case, MAS are not included into MCS because several papers distinguished between the influence on the specified sort of MCS and I considered important to make this distinction in order to recognize that the influence was on the financial systems of the organization.

4.3.17 Markets

Influence on markets refers to the influence that some actors have on the structure of the market and the ability to change it.

4.3.18 Networking

The effect that the defined actors have on networking refers to their influence on building and managing relationships within an organizational environment (Hoang & Antoncic, 2003) in order to be utilized for one of the following purposes:

- Accessibility to new ideas and resources that reinforce the entrepreneurial process.
- Acquisition of credibility and reputation through the collaboration with reputable partners.
- Knowledge sharing and learning promotion.

Entrepreneurial networks can be informal and formal. The formers are created through personal relations, family ties and business partners (friendship network). The latter include venture capitalists, banks, creditors and professionals such as accountants, lawyers and trade associations (Das & Teng, 1997).

4.3.19 Organization

The influence of the actors on the organization of the firm refers to their effect on the activities needed to establish the physical structure and organizational processes of the venture (Bhave, 1994).

4.3.20 Performance

By performance I refer to the influence that an actor has on the degree of efficiency and effectiveness of the operation of the organization.

4.3.21 Product development

Product development is the process in which an organization develops a system for transforming the resources into a more valuable form, an idea into a tangible physical asset. The process is composed by different stages where at the end of each one, a decision-making meeting is needed and where the managers³ decide about the future of the project. The typical phases of the product development are: planning phase, concept design, development of the physical product, testing and production start up.

4.3.22 Risk decision

The influence of an actor on risk decisions refers to the effect that it has on whether the decision adopted is the correct one or not.

Risk decision can be conceptualized in three different ways: risk as a variance, risk as downside loss or risk as opportunity. The former focuses with the potential outcomes (either

³ Manager (or project manager) is the person responsible of moving a product development project from an idea to a physical object.

the good or bad ones). Risk as a downside loss deals with the likelihood and magnitude of potential losses and risk as opportunity on the upside potential (Janney & Dess, 2006).

4.3.23 Securing resources

The effect of actors on securing resources is defined as the influence that they have on the acquisition of firm resources (including organizational processes, assets, capabilities, information, knowledge, etc.).

4.3.24 Selection of a firm

Influence on the selection of a firm refers to the actors which have influence over the designation of a given organization for specific purposes. Specifically, the present study focuses on the selection of a firm to join a venture.

4.3.25 Success

Some of the papers analyzed have identified the actors influencing on the success of a firm. The term success is a quite general concept making necessary a clarification to define it. It ranges from the survival of the firm to profitability being survival, growth and profitability the most used criteria. However, some of the studies analyzed did not detail their definition of success. As a result, the definition used in the present study is the most expanded one (survival, growth and profitability).

4.3.26 Survival of new firms

The influence that an actor has on the survival of new firms is referred as the capacity that the actor has to manage the firm in order to avoid the disbanding of the organization and maintain the efforts to develop the new venture.

4.3.27 Transaction costs

Transaction costs can be defined as the additional costs associated with the purchase or sale of assets. Then, some of the actors identified in the analysis, influence on the transaction costs performed by the organization.

5 Results

In the present section, analyses of the results are presented. Table 5 provides an overview of the actors and the influences identified in the 62 studies included in the meta-analysis. As it can be seen, some papers have more than one entry because several actors or influences have been identified (see the abbreviation list).

The goal of the study is to identify the actors and their respective influences on new venture creation. With this in mind, the first section presents an analysis and discussion of the main actors obtained after the evaluation (see annex 2). Next, the principal influences are identified and discussed. Finally, a relation between the main actors and main influences is provided.

| PAPER | ACTOR | INFLUENCE |
|------------|----------------------|-------------------------------|
| Paper 1 | Venture Capitalist's | Performance |
| Paper 2.1 | Moral Support | Discover opportunities |
| Paper 2.2 | Moral Support | Financial resources |
| Paper 2.3 | Moral Support | Capacity to tolerate stress |
| Paper 3 | Human Capital | Performance |
| Paper 4 | Social Capital | Selection of the firm |
| Paper 5 | Social Capital | Alliance formation |
| Paper 6.1 | Human Capital | Survival of the firm |
| Paper 6.2 | Social Capital | Survival of the firm |
| Paper 7 | Incubator | Establishing knowledge |
| Paper 8 | Business Plan | Success |
| Paper 9 | Human Capital | Survival of the firm |
| Paper 10 | MCS | Product development |
| Paper 11.1 | Human Capital | Discover opportunities |
| Paper 11.2 | Social Capital | Discover opportunities |
| Paper 12 | Human Capital | Management control systems |
| Paper 13 | Human Capital | Management accounting systems |
| Paper 14 | Venture Capitalist's | Management control systems |
| Paper 15 | Venture Capitalist's | Generate employment |
| Paper 17 | Business Plan | Survival of the firm |
| Paper 16.1 | Business Plan | Product development |
| Paper 16.2 | Business Plan | Survival of the firm |
| Paper 18.1 | Knowledge | Survival of the firm |
| Paper 18.2 | Human Capital | Survival of the firm |
| Paper 19.1 | Social Capital | Acquiring legitimacy |
| Paper 19.2 | Social Capital | Organization |
| Paper 20 | Venture Capitalist's | Selection of the firm |
| Paper 21.1 | Social Capital | Discover opportunities |
| Paper 21.2 | Social Capital | Securing resources |
| Paper 21.3 | Social Capital | Acquiring legitimacy |
| Paper 22 | Knowledge | Firm cohesion |
| Paper 23 | Human Capital | Firm cohesion |

| PAPER | ACTOR | INFLUENCE |
|------------|----------------------|---------------------------------|
| Paper 24 | Venture Capitalist's | Performance |
| Paper 25 | Incubator | Establishing knowledge |
| Paper 26 | Life cycle | Management accounting systems |
| Paper 27 | Social Capital | Composition of the firm |
| Paper 28 | Social Capital | Composition of the firm |
| Paper 29 | Social Capital | Success |
| Paper 30 | Business Plan | Performance |
| Paper 31 | Social Capital | Alliance formation |
| Paper 32 | Interfirm Alliances | Transaction costs |
| Paper 33 | Social Capital | Success |
| Paper 34 | Social Capital | Alliance formation |
| Paper 35 | Incubator | Performance |
| Paper 36 | Knowledge | Risk decision |
| Paper 37 | MCS | Product development |
| Paper 38 | Business Plan | Performance |
| Paper 39 | Business Plan | Growth of the firm |
| Paper 40 | Business Plan | Financial resources |
| Paper 41 | Social Capital | Composition of the firm |
| Paper 42 | Social Capital | Composition of the firm |
| Paper 43 | Incubator | Performance |
| Paper 44 | Incubator | Innovation |
| Paper 45 | Interfirm Alliances | Interfirm cooperation |
| Paper 46 | Incubator | Securing resources |
| Paper 47 | Incubator | Performance |
| Paper 48 | Life cycle | Management accounting systems |
| Paper 49 | Social Capital | Composition of the firm |
| Paper 50 | Business Plan | Management control systems |
| Paper 51 | Incubator | Interfirm cooperation |
| Paper 52 | Incubator | Performance |
| Paper 53 | Social Capital | Financial resources |
| Paper 54 | Business Plan | Survival of the firm |
| Paper 55.1 | Social Capital | Financial resources |
| Paper 55.2 | Social Capital | Survival of the firm |
| Paper 56 | Social Capital | Financial resources |
| Paper 57.1 | Social Capital | Markets |
| Paper 57.2 | Social Capital | Survival of the firm |
| Paper 58 | Social Capital | Financial resources |
| Paper 59 | Social Capital | Networking |
| Paper 60 | MCS | Firm strategy |
| Paper 61 | Human Capital | Networking |
| Paper 62 | Social Capital | Achieving competitive advantage |

Table 5: Actors and influences identified in each paper.

5.1 Relation between actors and influences

Before the detailed analysis and discussion of the actors and their respective influences obtained from the meta-analysis, an overview of the main findings is shown in Figure 8. In order to understand the graphics, Figure 7 is used to explain the interpretation of them. The squares represent the actors. They are associated with a percentage which shows the proportion of each actor among the total importance that they make in a new venture. The tightness of the lines connecting the actors with the black box (new venture) is also proportional to their importance.

On the right of the black box, there are the possible influences of each actor (section 4.1 explains how to calculate the value). The first percentage on the right represents the proportion in which the possible actors influence on them. For example, Factor 1 is influenced by two actors, number 1 and number 2. The first is more important than the second because when factor 1 is influenced it is because of Actor 1 in a 75 per cent and by Actor 2 in a 25 per cent.

Considering the influence of each actor on a venture, the proportion of the actor influencing a given factor is shown in brackets (second percentage). As an illustration, if Actor 1 represents the 40 per cent of the importance of the total actors performing in a new venture, 30 per cent influences on the factor 1 and a 10 per cent on factor 2.

Finally, the thickness of the lines joining the black box with the influences is proportional to the aggregate value of the importance of each actor influencing a single factor.

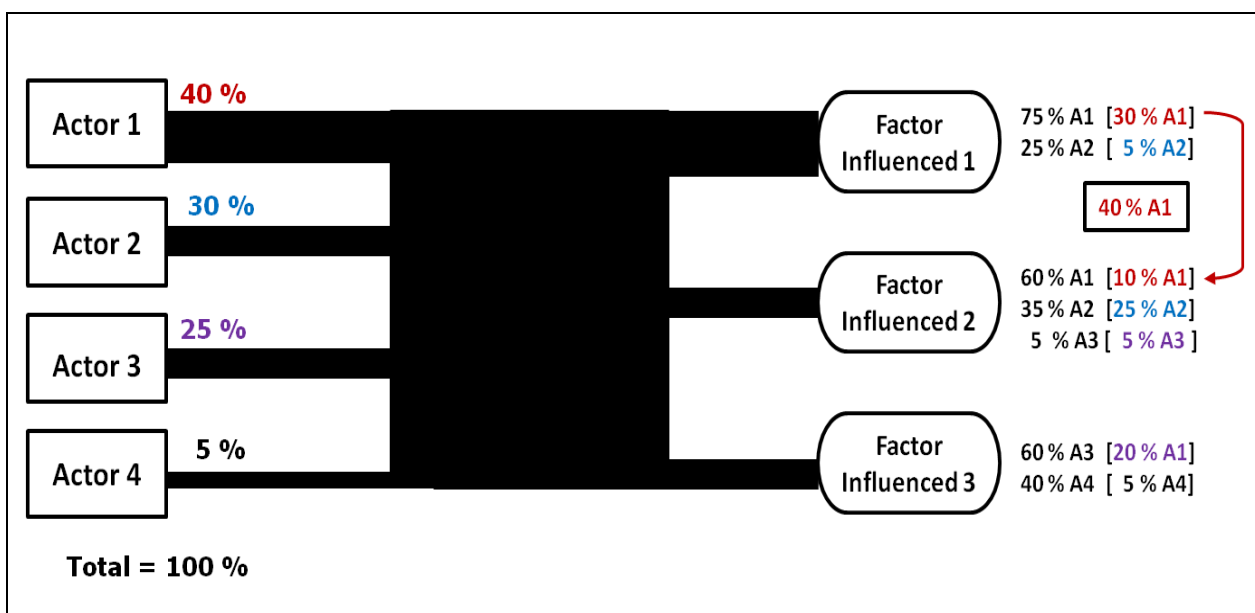


Figure 7: The Resource-based view over time (Wade & Hulland, 2004).

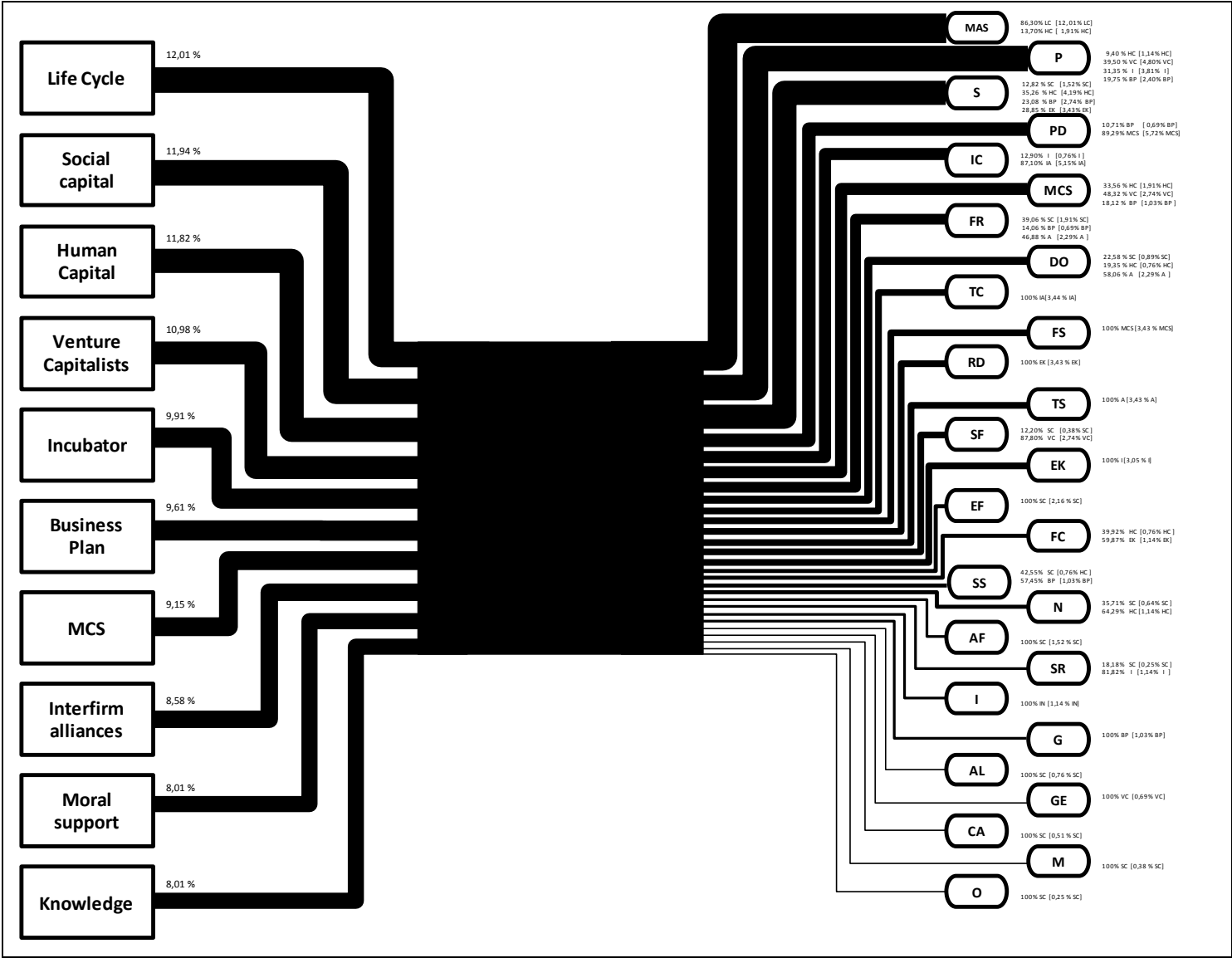


Figure 8: Actors and their respective influence on a new venture.

5.2 Actors

Table 6 reports the number of citations of each actor identified during the analysis. As it can be observed, social capital is the actor which was recognized the most (27 entries), followed by business plan (10 entries) and human capital and incubators (9 citations). Nevertheless, the importance is on identifying the significance of each actor on a new venture.

| ACTOR | Number of citations |
|---------------------|---------------------|
| Social Capital | 27 |
| Business Plan | 10 |
| Human Capital | 9 |
| Incubator | 9 |
| Venture Capitalists | 5 |
| Affect | 3 |
| Knowledge | 3 |
| MCS | 3 |
| Interfirm Alliances | 2 |
| Life Cycle | 2 |

Table 6: Number of citations of each actor

After the evaluation of each actor according to their influence (see annex 2), table 7 presents the ranking of the six actors in accordance with their importance (average of each actor). Examining the results, it has been decided that in the present work, the four main actors should be emphasized because of their importance: it can be seen that life cycle is on the top of the classification, followed by social capital, human capital and venture capitalists.

Although the life cycle is classified as the most influential actor, it was identified in only two papers. These papers (number 26 and 48) explained how the different stages of a company life are influential for the adoption of Management Accounting Systems (MAS). Both studies agree that there are different organizational characteristics and MAS formalities across life-cycle stages. Then, depending on the stage of the life cycle of the company, the needs for MAS adoption are also different. The formality of these systems increases from birth to growth and from maturity to revival and the most popular systems adopted by firms are the ones that automate the manual ones (Moore & Yen, 2001). It is suggested that to verify the importance of the present actor, more studies with life cycle as an actor should be analyzed in order to identify if the present result is correct or if it is a gap on the research.

| ACTOR | IMPORTANCE |
|---------------------|------------|
| Life Cycle | 3,500 |
| Social Capital | 3,481 |
| Human Capital | 3,444 |
| Venture Capitalists | 3,200 |
| Incubator | 2,889 |
| Business Plan | 2,800 |
| MCS | 2,667 |
| Interfirm Alliances | 2,500 |
| Affect | 2,333 |
| Knowledge | 2,333 |

Table 7: Importance of each actor after evaluation

The second actor with a highest importance is Social Capital. From the total of 73 actors, 27 had social capital as the main actor. In five of the studies the actor had influence on establishing a firm and in four of them in the financial resources. Social capital also influences the survival of new firms and the alliance formation (there were three papers for each influence) as well as acquiring legitimacy, discover opportunities and the success of the venture (two studies for each one). There was only one paper where social capital was important for securing resources, achieving competitive advantage, networking formation, the organization of the venture or the selection of the firm to obtain external capital or join a incubator. Finally, social capital is also related to the market but only in one paper which suggested that this actor makes influence in the production of a market structure. (see figure 9). Social capital was considered very important for its influence on the network formation. Walker, Kogut and Shan (1997) demonstrated that network formation is significantly influenced by the development and nurturing of social capital. Shane and Stuart's (2002) study supports the importance that social capital influences the acquisition of financial resources and the survival of new ventures because they get to the conclusion that "the presence of direct and indirect ties to venture investors prior to firm founding, sharply decrease the hazard of mortality and increase the likelihood that start-ups obtain external funding". The influence of social capital in financial resources is also supported by Uzzi (1999) who suggested that firms with embedded relations and high network complementarity are more likely to be considered credit eligible and to receive lower cost financing. Hu, and Korneliussen (1997) studied the effect of personal ties (social capital) and reciprocity in the control of strategic alliances between competing ventures. The results show that reciprocity has a significant effect on performance and personal ties have a significant effect on reciprocity. Thus, the study proves that cooperating parties are likely to present a high level of commitment and flexibility in relations where reciprocity is strong. Regarding the effect that social capital has on the composition of the firm, Greve (1995) proves the importance of social networks for founding a business. Concerning the influence that social capital has on discovering opportunities, Davidsson and Honig (2003) identified that people who have

parents in business or have close friends or neighbours in business are more likely to become nascent entrepreneurs.

Human capital is the actor listed in the third position of the analysis. It has a very strong influence on the adoption of management control systems and more specifically in the adoption of management accounting systems. Equally important is the influence of this actor in the survival of new ventures. Besides that, it also effects the networking formation and in general, the performance of the new venture. Moreover it has a discrete role discovering opportunities and during the process of firm cohesion.

To demonstrate the importance of human capital in the adoption of MCS and MAS, Davila (2005) and Davila and Foster (2005) studied how factors like age, size, the presence of outside investors, CEO's replacement and CEO experience, as well as a good planning culture are positively associated with the adoption and introduction of different types of MCS. As an illustration of the influence on firm survival, human capital characteristics of the founder (especially experience in activities related to business ownership and years of schooling) increase the firm's survival time (Bosma et. al., 2002 and Brüderl et. al 1992). Following this further, the last study found that the most important determinants for firm survival are organizational characteristics (such as number of employees and amount of capital invested) and organizational strategies. To put it briefly, human capital have a direct effect on organizational survival. Regarding firm performance, human capital does not seem to have a strong influence (Batjarga 2000). Human capital is also associated with entrepreneurs' propensity to utilize existing networks. It seems that these influences depend on entrepreneurs' marketing or managerial experience and it increases the ability to interact with strangers (Zhang et al. 2008). Finally, as mentioned before, this actor also influences firm cohesion and the opportunity recognition but as figure 9 shows, it is not really significant. Venture capitalists are ranked in the fourth place regarding the importance of new venture performance. Apparently, venture capitalists have a strong influence in the selection of a firm for funding, the adoption of Management Control Systems (MCS) and also its performance of the new ventures in its various stages. By way of contrast, the influence that this actor has in employee growth is almost inexistent (see figure 9). As an illustration of its significance in the adoption of MCS, the study of Davila and Foster (2007) says that VC-backed companies build up their systems much faster and to a larger extend than non-VC-backed-companies where the financial planning does not dominate the adoption of systems as much as in the former ones. In the same study, they identified that at an early stage, the most adopted system is financial planning, followed by the human resource and strategic planning categories.

Notably, venture capitalists accelerate the adoption of management control systems which at the same time are important to the growth of early-stage start-up companies. With attention to the selection of a firm for funding, venture capitalists are the ones who develop and important role. As an illustration, venture capitalists based their decisions to select candidates for funding according to objective indicators of venture development such as organizing activities, marketing activities or the level of sales of the venture (Shane and Delmar, 2006). For this reason, founders actions of firm development are closely related to the subsequent investment options of investors.

The influence that venture capitalists have in new venture performance is different along the various stages of the firm. To put it differently, depending if the venture capitalists invest in an early or later stage of a venture's life cycle, the effect of demographic, environmental, information processing and decision making variables will affect performance in a different way (Flynn & Dormann, 2007). For this reason it is important that venture capitalist consider carefully in which stage of the venture will invest because the influence made on its performance will be completely different. Equally important is to mention that not all venture capitalists have the same effect and their ability to assist entrepreneurs in their decision making process why may vary significantly (Arthurs & Busenitz, 2006). Moreover, the same study proves that venture capitalists serving in too many boards have a negative implication to new venture's dynamic capabilities⁴. Finally, one of the studies related venture financing and employee growth, suggesting that startup companies may delay their growth due to the shortage of financial resources (Davila, Foster & Gupta, 2003). The same authors suggested that if venture capitalists use objective criteria to select their investments, growth is not one of them.

Accordingly with table 6 Business Plan is the second actor that appears in more papers. However, and as it can be seen in the table 7, the importance is lower than life cycle, social capital, human capital or venture capitalists. It appears to influence the performance of the firm and more specifically the survival and success of new ventures, the adoption of MCS as well as the product development, the growth of the company and the financial resources. Illustrated with an example, one of the studies (Gruber, 2007) explained that planning can be of great value to emerging firms because it can have a positive effect on venture performance. Nevertheless, in the same article it is said that the value obtained from this actor varies with the type of founding environment, the sort of activities pursued in planning, and the effort dedicated to specific activities. Other authors questioned the importance of business planning. For instance, Julian et al. (2007) carried out a study that concluded saying that there was no difference between the performance of new firms launched with or without written business plans. Considering the influence that business plan has on the survival of new firms, Shane and Delmar (2004) found that entrepreneurs who completed a business plans before get to customers and beginning marketing or promotion had less possibilities of termination that other new firms during their first 30 months of life. In other words, a business plan should be beneficial before begin with organizing actions related to marketing. In another study of Delmar and Shane (2003) it is debated that business planning increments founders' product development and venture organizing activities and reduce the chance of venture disbanding. The influence on the financial resources performed by business planning is acknowledged by Kirsch et al. (2009) who argued that some planning documents and information contained therein are weakly associated with venture capital funding decisions, arguing that this information is learned independently of its inclusion in the business planning document. Finally, firm strategy (included under the label of business plan) influences the adoption of management control systems and the performance consequences of its initial choice. Sandino (2007) argues that the initial choice between the

⁴ Dynamic capabilities are antecedent organizational and strategic routines by which managers alter their resource base to generate new value (Todorovic and Suntornpithug, 2008)

different categories of MCS depends on the venture's strategy and structure. For this reason, the better the MCS fulfils the strategy of the firm, the better the performance of the venture.

Incubator is the last actor that will be discussed. It has been identified in nine occasions but by the same token as business plan, the importance is lower than life cycle, social capital, human capital and venture capitalists. The most important influences are on establishing knowledge, followed by the performance of the new venture and on securing resources. On the contrary, there is a lower effect on interfirm cooperation.

Taking the case of incubator in establishing knowledge, recent research support this focus (Branstad, 2010) and indicates that organizational knowledge is an important resource for the incubator and that it facilitates the transfer of entrepreneurial and technological knowledge processes from the owners to the new ventures. On the other hand, Fukugawa (2006) studied if Science Parks were likely to establish knowledge linkage and did not found a significant difference between ventures located on science parks and other property-based initiatives regarding the encouragement provided by tenants. Hence, even if there were an important amount of studies about incubators and they secure resources and make easier to establish interfirm cooperation it does not seem that were really relevant regarding firm performance. Last but not least, Adam and Adam (2008) studied the way that tenant firms use the resources offered by the incubator, observing that the needs are different across the life cycle of the company. In that case, to make an effective use of the resources offered by the incubator, the tenant firms should identify in which stage are located.

Figure 9 represents the relation between the four main actors (on the left) and their influences (on the right). The number associated to each actor represents the percentage of importance of each actor from the total of six actors identified. On the right, the influences framed with discontinuous lines are the ones that the main actors do not have any relation. Besides, next to each influence it is indicated their composition. For example, MAS is influenced with an 86,50 per cent by the actor life cycle and with a 13,70 per cent by the actor human capital. Moreover, considering the total influence of a single actor, the proportion of this influence on a particular factor is show in brackets. As an example, from the total influence of a venture capitalist on a new firm, 43,75 per cent influences on performance, 24 per cent on the adoption of MCS and 6,25 per cent on generate employment. It can be observed that social capital is the actor that has a wide variety of influences, followed by human capital, venture capitalists and finally life cycle which as mentioned above, it only influences on the adoption of MAS.

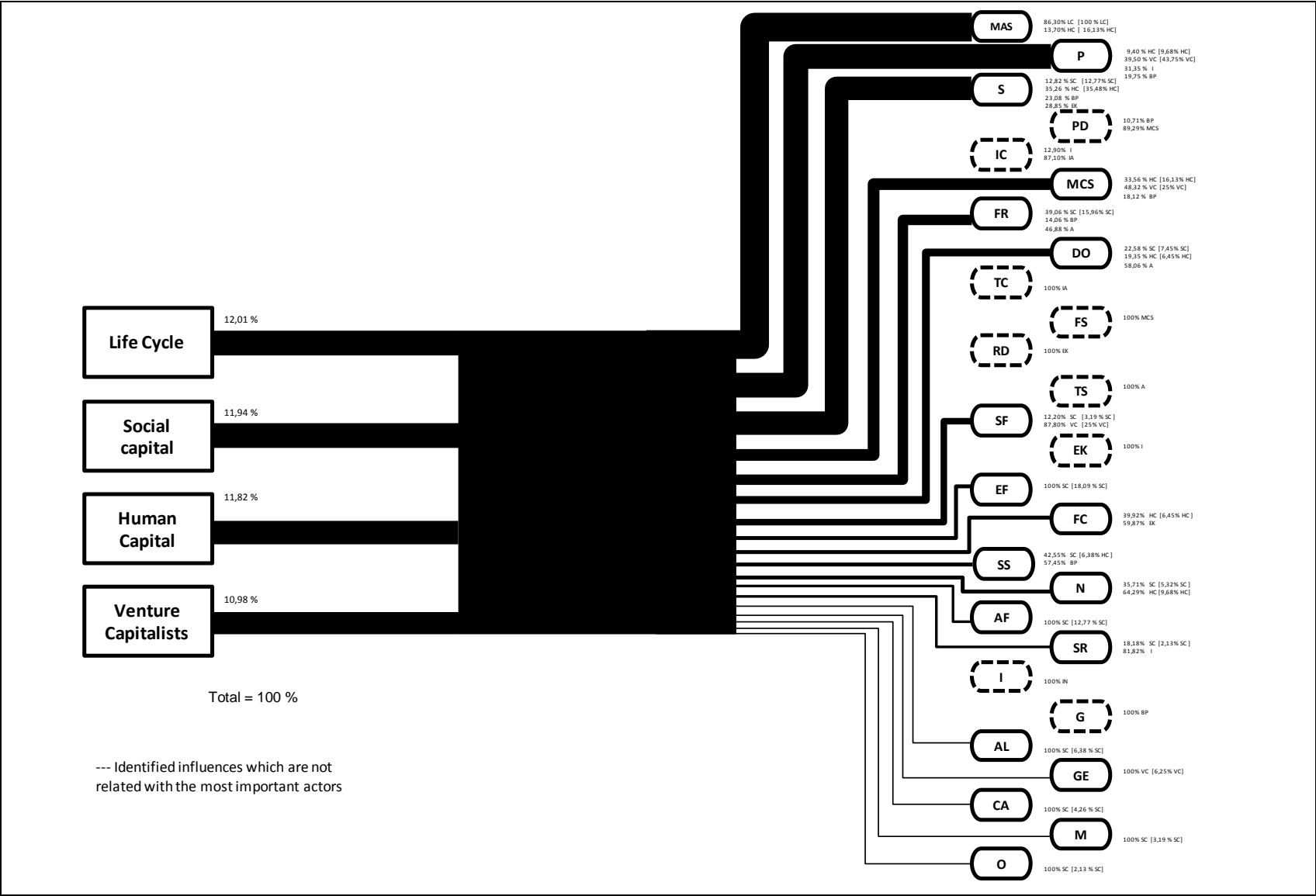


Figure 9: Relation between the four main actors and their influence.

5.3 Influence

It is now turned to the analysis of the influences performed by the actors. Table 8 shows the influences identified during the meta-analysis and their number of citations. It can be observed that after the evaluation of 62 papers (or 73 entries), 28 different influences were listed. The most mentioned are the survival of new firms (10 papers) and performance of the firm (9 papers). However, the only information obtained from this table is the number of citations of each influence, without contributing to the significance them.

| Factors influenced by the actors | Number of citations |
|----------------------------------|---------------------|
| Survival of new firms | 10 |
| Performance | 9 |
| Financial Resources | 6 |
| Establishing a firm | 5 |
| Discover Opportunities | 4 |
| Alliance Formation | 3 |
| Management Control systems | 3 |
| MAS | 3 |
| Product Development | 3 |
| Success | 3 |
| Acquiring legitimacy | 2 |
| Establishing knowledge | 2 |
| Firm cohesion | 2 |
| Interfirm cooperation | 2 |
| Networking | 2 |
| Securing Resources | 2 |
| Selection of firm | 2 |
| Achieving competitive advantage | 1 |
| Capacity to tolerate stress | 1 |
| Firm Strategy | 1 |
| Generate employment | 1 |
| Growth of start-up companies | 1 |
| Innovation | 1 |
| Markets | 1 |
| Organization | 1 |
| Risk Decision | 1 |
| Transaction costs | 1 |

Table 8: Number of citations of each factor influenced by the actor.

More interesting is the classification of the influences after evaluation. Table 9 provides the results of the mentioned evaluation. The value given to the column importance corresponds to the average of each influence after the rating (see annex 3). The classification shows that

six influences are scored with the highest value. For this reason, achieving competitive advantage, alliance formation, establishing knowledge and the adoption of management control systems and management accounting systems seems to be the strongest influences on the performance of new ventures.

| Factors influenced by the actors | Importance |
|---|-------------------|
| Achieving competitive advantage | 4,00 |
| Alliance Formation | 4,00 |
| Establishing knowledge | 4,00 |
| Management Control systems | 4,00 |
| MAS | 4,00 |
| Networking | 4,00 |
| Selection of firm | 3,50 |
| Establishing a firm | 3,40 |
| Survival of new firms | 3,40 |
| Financial Resources | 3,17 |
| Acquiring legitimacy | 3,00 |
| Capacity to tolerate stress | 3,00 |
| Firm Strategy | 3,00 |
| Growth of start-up companies | 3,00 |
| Innovation | 3,00 |
| Markets | 3,00 |
| Performance | 3,00 |
| Risk Decision | 3,00 |
| Success | 3,00 |
| Discover Opportunities | 2,75 |
| Interfirm cooperation | 2,50 |
| Securing Resources | 2,50 |
| Product Development | 2,33 |
| Organization | 2,00 |
| Transaction costs | 2,00 |
| Firm cohesion | 1,50 |
| Generate employment | 1,00 |

Table 9: Final evaluation of each influence

Next, I relate each of the influences with their respective actor and at the same time, the importance is discussed or clarified with examples from the analysed studies.

In the first place, achieving competitive advantage is scored with four points. Networking activities (social capital) is the only actor which has been related to this purpose. Zhao and Aram (1995) demonstrated that a strong network is associated with faster venture growth and increase the likelihood of obtaining the resources needed by new firms. Zhao and Aram suggested that entrepreneurs should explore and reaffirm a broad range of network

relationship with the aim of obtaining competitive advantages in front of other rival organizations.

Equally important is the alliance formation which is also influenced by social capital (personal ties and networking). Particularly, Gulati (1990) argument that accumulated network resources arising from firm participation in the network of accumulated prior alliances are influential in firms' decisions to enter into new alliances. Thus, the propensity of ventures to join new alliances is influenced by the amount of network resources available to them. Moreover, the initial performance of new ventures increases with the size of its alliance network at time of founding (Baum et al, 2000).

Establishing knowledge seems to be influenced by the presence of incubators in a couple of studies. In one of them, its influence is considered very high because the final conclusion of the paper is that knowledge is a vital internal resource for the incubator, enabling the transfer of entrepreneurial and technological knowledge from incubators to tenants (Branstad, 2010). By the same token, a management control system is another factor which has been relevantly influenced by three different actors. Human capital was the one with a stronger influence on the adoption of management control systems, followed by human capital and venture capitalists. Davila (2005) studied how the age of the firm, the number of employees, the replacement of the CEO and the presence of venture capitalists influenced the adoption of management control systems. He pointed out that size is a key driver of the emergence of control systems during the first stages of a firm's growth and ages. Besides, the number of employees and the presence of venture capital are related with a faster adoption of operating budgets. The replacement of the CEO and the presence of venture capitalist seem to be factors that increase the emergence of MCS through their previous experiences. On the other hand the initial choose of MCS is related with the venture's strategy and it has been proved that the performance of a firm is better if the initial MCS are suited to the strategy of the firm (Sandino, 2007).

In contrast with MCS, Management Accounting Systems are only related with two actors. The first one is human capital and like in the case of MCS, it has a considerable importance (Davila and Foster, 2005). The second actor is life cycle which in a couple of studies has been observed that depending on the stage of the firm, the type of MAS required for the venture is different. For this reason, first of all, a venture should recognize in which stage of its life cycle is located and depending on that, choose the most suitable MAS (Moore & Yen 2001; Granlund & Taipaleenmäki 2005).

Finally, networking is the last important factor that has been recognized. The two actors that make influence on it are social capital and human capital, being the former the most significant one. To point out, a study of biotechnology start-ups from Walker et al (1997) demonstrates that network formation is significantly influenced by the development and nutrition of social capital. Zhang et al (2008) prove that occupational status and industrial experience are positively connected with the tendency to utilize existing networks by enhancing the resourcefulness of their network ties. The same study also demonstrates that marketing and management skills increase the ability of entrepreneurs to interact with other people.

At this point it is important to look again at the results and summarize the relations between the main influences and their respective actors. These connections are illustrated in Figure 10. Incubator and Business Plan are perceived to be influential in new ventures, being respectively located on the fifth and sixth place regarding significance. Therefore, as incubator is associated with establishing knowledge and at the same time is the only actor affecting it, it drives me to the conclusion that establishing knowledge may not be that significant and for this reason, it could be disregarded.

I noted earlier that business plan is not one of the most relevant actors. In Figure 10 it can be seen that it is only associated with the adoption of management control systems. However, human capital and venture capitalists (two of the four main actors) are also related to MCS. As a result, it is suggested that the influence that a business plan (actor) exercise on the adoption de management control systems could be discounted.

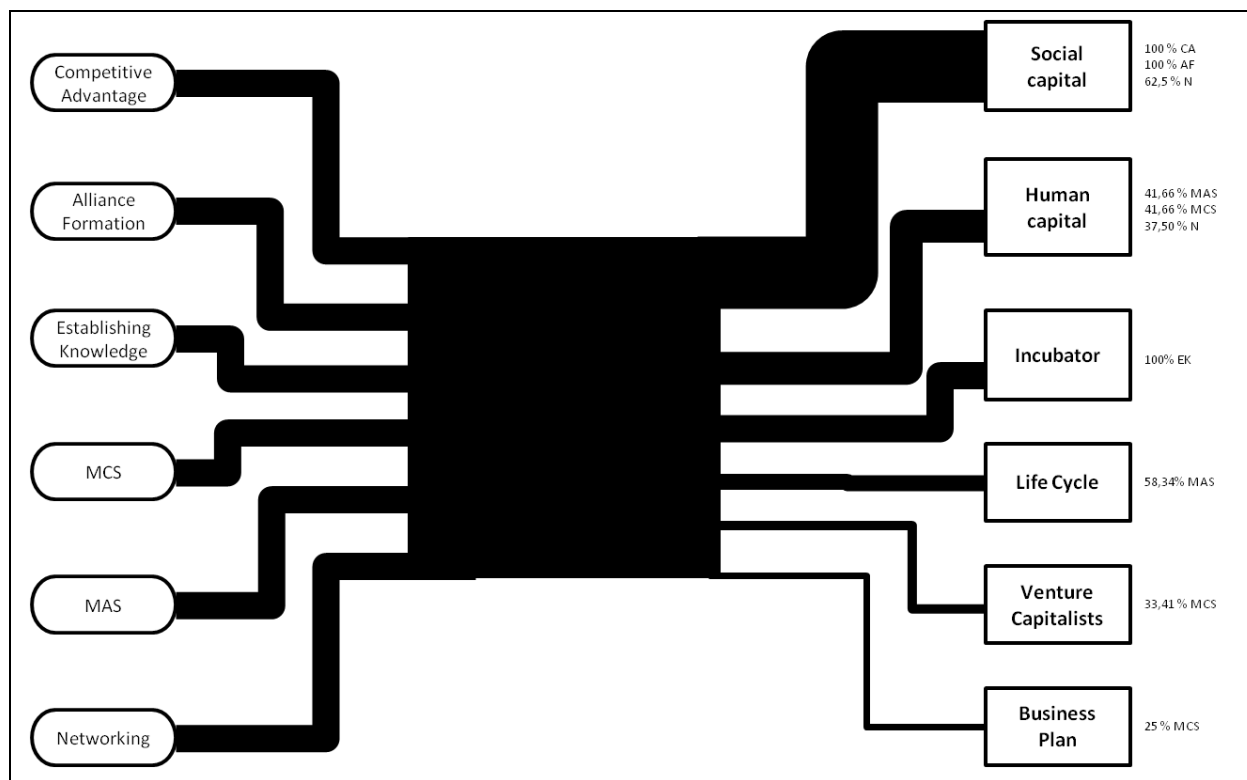


Figure 10: Relationship between the influences with a higher punctuation and their respective actors.

Figure 10 shows graphically how the main influences (on the left) are related to the main actors (on the right). The thickness of the lines that connect the influences with the black box is exactly the same because it represents the evaluation of each influence and it is the same (in this case the final value is 4 over 5). From the black box to the right, the thickness of the lines is proportional to the aggregate value of importance of each factor that has been influenced. The percentage next to each actor indicates the distribution of the influences along the actors.

6 Conclusions

The aim of the study was to analyze and recognize the main firm actors and their influences on a new venture. To bring the study to a close, the main findings and the future lines of research are summarized.

First of all, the results of the meta-analysis identified ten firm actors: life cycle, social capital, human capital, venture capitalists, incubator, business plan, management control systems, interfirm alliances, moral support and knowledge. After their evaluation, it seems that regarding the importance of their influences on a venture, the first four are the most important ones.

Secondly, the ten actors identified have an influence on twenty-seven different factors. From them, achieving competitive advantage, alliance formation, establishing knowledge, adoption of management control systems (especially management control systems) and networking were the factors that appeared to be more influenced. However, establishing knowledge is not influenced by any of the main four actors, then, I would suggest that even if the final evaluation after analysis is high, since it only appears in two studies, its importance should be studied deeply.

Thirdly, life cycle seems to be the actor which importance is the highest. After analysis, the results showed that it has an influence on the implementation of management accounting systems. At the same time, this relation only appears in one paper. Under those circumstances, I would suggest that more studies that focus on the relation between life cycle stages and their influence on the adoption of MAS should be studied in order to verify whether the result obtained in the present study is correct or if it is a gap on the research.

Finally, some of the factors may act either as actors or as a factor influenced by another actor. Hence, another future line of research could be the study of their relations in order to determine how they interact.

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Abbreviations

Abbreviations of the journals used in the meta-analysis:

| | |
|-------|--|
| AMR | Academy of Management Review |
| AOS | Accounting, Organizations and Society |
| AR | Accounting Review |
| ASQ | Administrative Science Quarterly |
| ASR | American Sociological Review |
| BC | Babson College |
| CSC | Corporate Social Capital |
| EAR | European Accounting Review |
| EJIM | European Journal of Innovation Management |
| ETP | Entrepreneurship, theory and Practice |
| HBR | Harvard Business Review |
| IEMJ | International Entrepreneurship and Management Journal |
| IJEBR | International Journal of Entrepreneurial Behaviour and Research |
| IJEIM | International Journal Entrepreneurship and innovation management |
| IJO | International Journal of Industrial Organization |
| IJRM | International Journal of Research in Marketing |
| JBV | Journal of Business Venturing |
| JEC | Journal of Enterprising Culture |
| JEP | Journal of Economic Perspective |
| JM | Journal of Management |
| JSBM | Journal of Small Business Management |
| JTT | Journal of Technology Transfer |
| MS | Management Science |
| OS | Organization Science |
| RP | Research Policy |
| SBE | Small Business Economics |
| SJM | Scandinavian Journal of Management |
| SMJ | Strategic Management Journal |
| SP | Scales Paper |
| T | Technovation |

Abbreviations of the actors:

| | |
|-----|----------------------------|
| AL | Moral support |
| BP | Business Plan |
| HC | Human Capital |
| IN | Incubator |
| IA | Interfirm Alliances |
| K | Knowledge |
| LC | Life Cycle |
| MCS | Management Control Systems |
| SC | Social Capital |
| VC | Venture Capitalists |

Abbreviations of the influences:

| | |
|-----|---------------------------------|
| AF | Alliance formation |
| AL | Acquiring legitimacy |
| CA | Achieving competitive advantage |
| CF | Composition of the firm |
| DO | Discover opportunities |
| FC | Firm cohesion |
| FR | Financial resources |
| FS | Firm Strategy |
| G | Growth of the firm |
| GE | Generate employment |
| I | Innovation |
| IC | Interfirm cooperation |
| EK | Establishing knowledge |
| M | Markets |
| MAS | Management accounting systems |
| MCS | Management control systems |
| N | Networking |
| PD | Product development |
| O | Organization |
| P | Performance |
| RD | Risk decision |

| | |
|----|-----------------------------|
| S | Survival of the firm |
| SF | Selection of the firm |
| SR | Securing resources |
| SS | Success |
| TC | Transaction costs |
| TS | Capacity to tolerate stress |

Annex

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Annex 1: Reference list with the papers studied in the meta-analysis

In the following table it is referenced each paper which has been analyzed in the meta-analysis. The journal name is a short-term which can be look up in the abbreviation list:

| PAPER | TITLE | AUTHOR | DATE | JOURNAL | THEORY |
|----------|---|--|------|---------------|--|
| Paper 1 | Dynamic capabilities and venture performance: The effects of venture capitalists | Arthurs, J. D. Busenitz, L. W. | 2006 | JBV | Resource-based theory |
| Paper 2 | The Role of Affect in the Entrepreneurial Process | Baron, A. | 2008 | AMR | --- |
| Paper 3 | Entrepreneurial versatility, resources and firm performance in Russia: A Panel study | Batjargal, B. | 2000 | working paper | Upper echelons perspective Resource-based theory |
| Paper 4 | Entrepreneurs "Access to private equity in China: The Role of Social Capital" | Batjargal, B. Liu, M. M. | 2002 | WD | Social network theory |
| Paper 5 | Don't go it alone: alliance network composition and startups' performance in Canadian biotechnology | Baum, J. A. C. Calabrese, T. Silverman, B.S. | 2000 | SMJ | Alliance networks theory |
| Paper 6 | The Value of Human and Social Capital Investments for the Business Performance of Startups | Bosma, N. Van Praag Thurik, R. De Wit, G. | 2002 | SCALES Paper | Human capital and Social capital theory |
| Paper 7 | A study of management tasks and stakeholders in a hybrid corporate incubator | Branstad, A. | 2010 | EJIM | Management and innovation theory |
| Paper 8 | Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning-performance relationship in small firms | Brinckmann, J. Grichnik, D. Kapsa, D. | 2010 | JBV | --- |
| Paper 9 | Survival Changes of newly founded Business Organizations | Brüderl, J. Preisendorfer, P. Ziegler, R. | 1992 | ASR | Human capital theory Organizational ecology |
| Paper 10 | An empirical study on the drivers of management control systems' design in new product development | Davial, A. | 2000 | AOS | Uncertainty (by Galbraith) |
| Paper 11 | The Role of Social & human capital among nascent entrepreneurs | Davidsson, P. Honig, B. | 2003 | JBV | Human capital Theory Social capital theory |
| Paper 12 | An exploratory study on the emergence of management control systems: formalizing human resources in small growing firms | Davila, A. | 2005 | AOS | Management control theory |
| Paper 13 | Management Accounting Systems Adoption Decisions: Evidence and Performance Implications from Early-Stage/Startup Companies | Davila, A. Foster, G. | 2005 | AR | Organizational theory |
| Paper 14 | Management Control Systems in Early-Stage Startup Companies | Davila, A. Foster, G. | 2007 | AR | Management control theory Entrepreneurship theory |

| PAPER | TITLE | AUTHOR | DATE | JOURNAL | THEORY |
|----------|--|--|------|---------|---|
| Paper 15 | Venture Capital financing and the growth of startup firms | Davila, A. Foster, G. Gupta, M. | 2003 | JBV | Signaling theory |
| Paper 16 | Does Business Planning Facilitate the Development of New Ventures? | Delmar, F. Shane, S. | 2003 | SMJ | Organizational theory |
| Paper 17 | Legitimizing first: organizing activities and the survival of new ventures | Delmar, F. Shane, S. | 2004 | JBV | Organizational theory and institutional theory |
| Paper 18 | Pre-Entry Knowledge, Learning, and the Survival of New Firms | Dencker, J.C. Gruber, M. Shah, S.K. | 2009 | OS | Evolutionary economics |
| Paper 19 | The life cycle of an Internet Firm: Scripts, Legitimacy, and Identity | Drori, I. Honig, B. Sheaffer, Z. | 2009 | ETP | Organizational scripts |
| Paper 20 | Multistage Selection and the Financing of New Ventures | Eckhard, J. T. Shane, S. Delmar, F. | 2006 | MS | Evolutionary theory |
| Paper 21 | Networks in Entrepreneurship: The Case of High-technology Firms. | Elfring, T. Hulsink, W., | 2003 | SBE | Network theory |
| Paper 22 | Shared cognition in top management teams: implications for new venture performance | Ensley, M. D. Pearce, C. L. | 2001 | JOB | --- |
| Paper 23 | Understanding the dynamics of new venture top management teams: cohesion, conflict, and new venture performance | Ensley, M. D. Pearson, A. W. Amason, A. C. | 2002 | JBV | Group theory and upper echelon perspective |
| Paper 24 | Life cycles of New Venture Organizations: Different Factors Affecting Performance | Flynn, D. Dormann, A. M. | 2001 | JDE | Life cycle prespective |
| Paper 25 | Science parks in Japan and their value-added contributions to new technology-based firms | Fukugawa, N. | 2006 | IJIO | ---- |
| Paper 26 | Management control and controllership in new economy firms - a life cycle perspective | Granlund, M. Taipaleenmäki, J. | 2005 | MAR | Life cycle theory |
| Paper 27 | Networks and entrepreneurship _ an analysis of social relations, occupational background, and use of contacts during the establishment process | Greve, A. | 1995 | SJM | Organization theory |
| Paper 28 | Social networks and entrepreneurship | Greve, A. | 2003 | ETP | Entrepreneurship theory |
| Paper 29 | Does the Degree of Redundancy in Social Networks Influence the Success of Business Start-ups? | Greve, A. Jenssen, J. | 2002 | IJEER | Social network theory |
| Paper 30 | Uncovering the value of planning in new venture creation: A process and contingency perspective | Gruber, M. | 2007 | JBV | Information-processing and decision-making theory |
| Paper 31 | Network location and learning: The influence of Network Resources and Firm Capabilities on Alliance Formation | Gulati, R. | 1990 | SMJ | Resource based perspective |
| Paper 32 | Does Familiarity breed Trust? The Implications of repeated ties for contractual choice in Alliances | Gulati, R. | 1995 | AMJ | Transaction cost theory |

| PAPER | TITLE | AUTHOR | DATE | JOURNAL | THEORY |
|-----------------|---|--|------|---|--------------------------------|
| Paper 33 | The evolution of firm networks: From emergence to early growth of the firm. | Hite, J.M. Hesterly, W.S. | 2001 | SMJ | Network theory |
| Paper 34 | The effects of personal ties and reciprocity on the performance of small firms in horizontal strategic alliances | Hu, Y. Korneliusson, T. | 1997 | SJM | Relational contracting theory |
| Paper 35 | Which firms benefit most from the incubators? | Hytti, U. Mäki, K. | 2007 | IJEIM | --- |
| Paper 36 | The risk concept for entrepreneurs reconsidered: New Challenges to the conventional wisdom | Janney, J. J. Dess, G. G. | 2006 | JBV | --- |
| Paper 37 | Accounting and strategizing: A case study from new product development | Jørgensen, B. Messner, M. | 2009 | AOS | Practice theory |
| Paper 38 | Do Business plans make no difference in the real world? A study of 117 new ventures. | Julian, E. L. William, D. Aleksandar, M. Michael, P. Sunil, S. | 2007 | BC | --- |
| Paper 39 | Young and No Money? Never Mind: The Material Impact of Social Resources on New Venture Growth | Khaire, M. | 2010 | OS | Social embeddedness theory |
| Paper 40 | Form or Substance: The role of Business Plans in Venture Capital Decision Making | Kirsch, D. Goldfarb, B. Gera, A. | 2009 | SMJ | Prototype theory |
| Paper 41 | Influence of social network structure on entrepreneurship participation - A study of 20 national cultures | Klyver, K. Hindle, K. Meyer, D | 2008 | IEMJ | Entrepreneurial network theory |
| Paper 42 | Roles of Social Capital in Venture Creation: Key Dimensions and Research Implications | Liao, J. Welsch, H. | 2005 | JSBM | Social capital theory |
| Paper 43 | Science Parks and the growth of new technology-based firms- academic-industry links, innovation and markets | Löfsten, H. Lindelöf, P. | 2002 | RP | --- |
| Paper 44 | R&D networks and product innovation patterns - academic and non-academic new technology-based firms on Science Parks | Löfsten, H. Lindelöf, P. | 2005 | T | Resource-based theory |
| Paper 45 | The leveraging of Interfirm Relationships as a Distinctive Organizational Capability: A longitudinal Study. | Lorenzoni, G. Lipparini, A. | 1999 | SMJ | Resource based perspective |
| Paper 46 | High-tech start-ups in University Science Park incubators: The relationship between the start-up's lifecycle progression and use of the incubator's resources | McAdam M. Mc Adam R. | 2008 | T | --- |
| Paper 47 | Assessing value-added contributions of university technology business incubators to tenant firms | Mian, S:A | 1996 | RP | --- |
| Paper 48 | Management accounting systems and organizational configuration: a life-cycle perspective | Moore, K. Yen, S. | 2001 | AOS | Organizational theory |
| Paper 49 | Family Matters: Gender, Networks, and Entrepreneurial Outcomes | Renzulli, L. A. Aldrich, H. Moody, J. | 2003 | 1998 conference entrepreneurs hip. Fontainebleau. | Social capital theory |

| PAPER | TITLE | AUTHOR | DATE | JOURNAL | THEORY |
|-----------------|--|---|------|---------|---|
| Paper 50 | Introducing the First Management Control Systems: Evidence from the Retail Sector | Sandino, T. | 2007 | AR | Contingency-based theory |
| Paper 51 | Cooperation patterns of incubators firms and the impact of incubator specialization: Empirical evidence from Germany | Schwartz, M. Hornych, C. | 2010 | T | Social capital theory |
| Paper 52 | The role of incubator interactions in assisting new ventures | Scilliitoe, J. L. Chakrabarti, A. K | 2010 | T | Social capital theory |
| Paper 53 | Network Ties, Reputation, and the Financing of New Ventures | Shane, S. Cable, D. | 2002 | MS | Organizational theory |
| Paper 54 | Planning for the market: business planning before marketing and the continuation of organizing efforts | Shane, S. Delmar, F. | 2004 | JBV | Goal setting theory |
| Paper 55 | Organizational Endowments and the Performance of University Start-ups | Shane, S. Stuart, T. | 2002 | MS | Organizational ecology Evolutionary theory |
| Paper 56 | Embeddedness in the making of financial capital: how social relations and networks benefit firms seeking financing | Uzzi, B. | 1999 | ASR | Social embeddedness theory |
| Paper 57 | The Sources and consequences of Embeddedness for the Economic Performance of Organizations: The Network Effect | Uzzi, B. | 1996 | CSC | Organizational theory Social network theory |
| Paper 58 | Corporate Social Capital and the cost of Financial Capital: An embeddedness Approach | Uzzi, B. Gillespie, J.J. | 1999 | CSC | Financial economic theory Structural embeddedness approach |
| Paper 59 | Social Capital, Structural Holes and the Formation of an Industry Network | Walker, G. Kogut, B. Shan, W. | 1997 | OS | Social capital theory Structural hole theory |
| Paper 60 | An empirical analysis of the levers of control framework | Widener, S. K. | 2007 | OS | --- |
| Paper 61 | A contingent model of network utilization in Early Financing of Technology Ventures | Zhang, J. Souitaris, V. Soh, P. Wong, P. | 2008 | ETP | Human capital theory Social capital theory |
| Paper 62 | Networking and Growth of Young Technology-Intensive Ventures in China | Zhao, L. Aram, J. D. | 1995 | JBV | Interorganizational theory |

Table 10: Reference list with the papers studied in the meta-analysis

Annex 2: Evaluation of the main actors

In the following table each paper is identified with their actor and influence. Each of this terms were evaluated from 1 to 5, being 1 the minimum and 5 the maxim value. The last line of the table corresponds to the sum of the values of each actor which give the total punctuation.

| | ACTOR | | | | | | | | | | | | | | | | | | | |
|------------|-------|---|----|---|----|---|----|---|----|---|---|---|----|---|-----|---|----|---|-----|---|
| | A | | BP | | HC | | IN | | IA | | K | | LC | | MCS | | SC | | VCs | |
| Paper 1 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 |
| Paper 2.1 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 2.2 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 2.3 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 3 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 4 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 5 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 6.1 | | 0 | | 0 | 1 | 4 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 6.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 7 | | 0 | | 0 | | 0 | 1 | 5 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 8 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 9 | | 0 | | 0 | 1 | 4 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 10 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 |
| Paper 11.1 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 11.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 12 | | 0 | | 0 | 1 | 5 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 13 | | 0 | | 0 | 1 | 5 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 14 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 |
| Paper 15 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 1 |
| Paper 16.1 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 16.2 | | | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 17 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 18.1 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 |
| Paper 18.2 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 19.1 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 19.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 2 | | 0 |
| Paper 20 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 |
| Paper 21.1 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 21.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 2 | | 0 |
| Paper 21.3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 22 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 1 | | 0 | | 0 | | 0 | | 0 |
| Paper 23 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 24 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 |
| Paper 25 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 26 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 |
| Paper 27 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 28 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 29 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 30 | | 0 | 1 | 4 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |

| | A | | BP | | HC | | IN | | IA | | K | | LC | | MCS | | SC | | VCs | |
|--------------|----------|----------|-----------|-----------|----------|-----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|----------|-----------|
| Paper 31 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 32 | | 0 | | 0 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 33 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 34 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 35 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 36 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 |
| Paper 37 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 2 | | 0 | | 0 |
| Paper 38 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 39 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 40 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 41 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 42 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 43 | | 0 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 44 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 45 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 46 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 47 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 48 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 | | 0 | | 0 |
| Paper 49 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 50 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 51 | | 0 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 52 | | 0 | | 0 | | 0 | 1 | 2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 53 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 54 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 55.1 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 55.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 56 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 57.1 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 |
| Paper 57.2 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 58 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 4 | | 0 |
| Paper 59 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 5 | | 0 |
| Paper 60 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 1 | 3 | | 0 | | 0 |
| Paper 61 | | 0 | | 0 | 1 | 3 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Paper 62 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | | 1 | 4 | | 0 |
| TOTAL | 3 | 7 | 10 | 28 | 9 | 31 | 9 | 26 | 2 | 5 | 3 | 7 | 2 | 7 | 3 | 8 | 27 | 94 | 5 | 16 |

Table 11: Evaluation of the main actors regarding importance.

In the following table each actor from the annex 2 is related to an influence. Each of this terms were evaluated from 1 to 5, being 1 the minimum and 5 the maxim value. The last line of the table corresponds to the sum of the values of each influence which give the final evaluation.

[illegible]

| Pa per | AF | AL | CA | CF | DO | FC | FR | FS | G | GE | I | IC | EK | M | MAS | MCS | N | PD | O | P | RD | S | SF | SR | SS | TC | TS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------|----|--------|----|----|----|----|----|--------|---|----|---|----|----|--------|-----|-----|---|----|---|---|----|---|----|----|----|----|----|---|---|--------|---|--------|---|---|---|---|---|---|---|---|--------|---|---|---|--------|---|---|---|---|---|---|---|---|---|---|---|
| 26 | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55.1 | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55.2 | | | | | | | | | | | | | | | | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57.1 | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57.2 | | | | | | | | | | | | | | | | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | | | | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | | | | | | 1 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | | | | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tota l | 3 | 1 2 | 2 | 6 | 1 | 4 | 5 | 1 7 | 4 | 1 | 2 | 3 | 6 | 1 9 | 1 | 3 | 1 | 3 | 1 | 1 | 1 | 3 | 2 | 5 | 2 | 8 | 1 | 3 | 3 | 1 2 | 3 | 1 2 | 2 | 2 | 8 | 3 | 7 | 1 | 2 | 9 | 2 7 | 1 | 3 | 0 | 1 4 | 3 | 2 | 7 | 2 | 5 | 3 | 9 | 1 | 2 | 1 | 3 |

Table 12: Evaluation of the main factors influenced by the actors.