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"Entrepreneurial leadership and decision making"

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Introduction

This PhD thesis deals with the entrepreneurial leadership and decision making. It is made up of three papers, which constitute the chapters of this work. They are distinct and independent papers but they are in a quite linear sequence: each one is built on the premises of the previous one. They all address the topic of team decision making putting it in relation with aspects which are very closely connected: the first chapter deals with the decision making and the related team dynamics in entrepreneurial teams whereas chapters two and three consider the relations between team decision making and entrepreneurial leadership. They all rely on the same theoretical background and, with some nuances, they contribute to the same body of research.

The first chapter is a literature review on the team dynamics in entrepreneurial decision making. The individual entrepreneurial decision making has been deeply investigated in the literature. Instead, the research on the team dynamics in entrepreneurial decision making still lacks of internal consistency. For this reason our literature review focuses on the team level of entrepreneurial decision making, bringing together contributions which analyze different aspects of this phenomenon separately. We carried out a systematic literature review on 30 management and entrepreneurship journals. We found 48 studies which directly address this research topic. We divided the papers into categories which represent all the topics analyzed in the literature related to the team dynamics in entrepreneurial decision making: decision making characteristics, heterogeneity among team members, conflict, behavioral integration and cognitive perspective. For each of these topics, we present suggestions for future research. Then, we provide also suggestions for future new areas of research, which go beyond and across the streams of the current literature.

We also introduce a model which shows how the different aspects analyzed are linked together and how they contribute to explain the team dynamics in entrepreneurial decision making.

Among the research gaps which emerged from the review, there was the topic of the participation in decision making among leaders. We found that the participation in decision making is usually studied in relation to employees participation to decisions, rather than among leaders. We thus decided to address some researches on this topic.

Both the second and the third chapter deal with the participation in decision making among leaders, linking it with the entrepreneurial leadership structure. The two chapters share the same theoretical background but they have different perspectives, stem from different research questions and use different methodologies.

The second chapter focuses on the participation in decision making among leaders and analyzes the leadership structure as a contextual variable. In particular, the research aims at investigating how

the participation in the decision making among leaders works in micro and small enterprises and how and why it changes with the growth of the firm in terms of increase in the organizational size. The study is based on a qualitative research based on semi-structure interviews (comprising also retrospective reports) carried out on eight micro and small enterprises of the ICT industry: four of them are micro firms (less than ten employees) and four are small firms (from ten to fifty employees). Speaking about the leadership structure we distinguish between individual, shared and distributed leadership. Concerning the degree of participation in decision making among leaders we refer to the Vroom - Yetton model and we distinguish between autocratic, consultative or group decision making processes. As a result, we argue that micro enterprises tend to adopt an autocratic or a group decision making. Instead, larger small enterprises are more likely to adopt consultative decision making processes. The main factors triggering the change towards the adoption of consultative decision making processes in larger small firms are the lower importance of the Motivation-time Attribute in larger small companies compared with micro firms and an enhanced level of conflict accompanied by more difficulties in reaching consensus. Speaking about the interplay between the leadership structure and the participation in decision making among leaders, we suggest that the increase in the firm size may affect one of the two levels without affecting the other, showing that the two levels are distinct and independent. A change in the leadership structure provokes a change in the participation in decision making among leaders, while the opposite does not occur.

This research provides two main contributions to the existing literature. Firstly, it enriches the literature on participation in decision making, providing insights on how participation in decision making differs in micro and small firms, on how it interacts with the leadership structure and on how and why decision making evolves when a micro firm becomes a small one. Moreover and maybe more importantly, we provide clarification on the distinction between leadership structure and participation in decision making among leader processes, while the previous literature has often mashed up the two concepts. We suggest that the leadership structure is the context in which strategic decision making takes place. Secondly, we suggest that the participation in decision making among leaders changes with the growth of the firm. This insight fills a gap in the literature on the growth of the firm, which has overlooked so far the changes in the participation in decision making among leaders which occur with the growth of the firm.

The research of the second chapter use a qualitative method to carry out an in-depth analysis. In that work we suggested, as a future research directions, that applying a configurational approach could be particularly fruitful because it would allow to analyze the complex interplay between leadership

structure and participation in decision making among leaders looking for different possible configurations, taking also into account the age and size of the firm.

The third chapter faces this challenge. It focuses on the leadership structure and analyzes the participation in decision making among leaders in order to have a more comprehensive understanding of the leadership structure. The research aims at finding configurations linking leadership structure, degree of participation in decision making among leaders, firm age and firm size and at understanding which of these configurations can lead to the firm success. We carried out a fuzzy set qualitative comparative analysis (fsQCA) on 20 micro and small firms operating in the software development industry: twelve of them are micro-enterprises (with less than ten employees) and eight of them are small enterprises (from ten to fifty employees). With leadership structure we mean individual, shared or distributed leadership. Participation in decision making among leaders has been assessed by three researchers, using a 3-item 5-point Likert scale drawn from a paper by Campion and his colleagues (1993). The same multi-rater method has been used to assess the firm success. In this case each researcher rated each firm interviewed using a 7-point Likert scale we built based on the paper by Vohora and his colleagues (Vohora et al., 2004), referring to the overcoming of some critical junctures in the development of the firm. We found that a shared leadership can lead to the firm success in micro young firms when accompanied by a participative decision making. A distributed leadership can lead to the firm success in young firms, both micro and small ones, when accompanied by a participative decision making. An individual leadership can lead to the firm success in small firms, regardless the firm age and the degree of participation in decision making. This research provides several contributions to the existing literature.. First of all we provide insights on the conditions under which an individual leadership or a co-leadership setting can lead to the firm success, distinguishing between shared and distributed leadership. Furthermore, we present a configurational model which brings together conditions whose interdependencies and causal complexity have not been analyzed in existing literature. In particular, for the first time we connect the participation in decision making among leaders with firm size and age and we analyze its joint role with leadership structure in determining firm success. This research also sheds new light on the mechanisms which lead to the success of micro and small firms.

Finally, we argue that in order to obtain a more nuanced vision of the growth of the firm, firm age and size should be considered simultaneously.

Speaking about the managerial contributions, the configurational model proposed here can help entrepreneurs and managers in understanding which are the leadership structure and degree of participation in decision making among leaders which best fit their company.

CHAPTER 1

TEAM DYNAMICS IN ENTREPRENEURIAL DECISION MAKING. A REVIEW OF THE LITERATURE

TEAM DYNAMICS IN ENTREPRENEURIAL DECISION MAKING. A REVIEW OF THE LITERATURE

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Abstract

Purpose – Decision making is a central process in a firm's activity, which can determine its success or failure. The purpose of this paper is to undertake a literature review of research on team dynamics in entrepreneurial decision making, which represents a new and emerging topic. We intend to: provide an account of contributions on this topic; integrate streams of research which have followed for a long time different paths, showing the connections between them; point out the gaps existing in the literature; propose some suggestions for future research directions, stressing their worthiness both for academic research and managerial practice. The underlying purpose of this paper is to facilitate and boost future research on entrepreneurial firms.

Design/methodology/approach – We carry out a systematic literature review, based on a keywords search on 32 journals publishing works related to entrepreneurship and management.

We first provide a clear definition of "decision making" and of "entrepreneurial teams" and we present the state of the art of literature on decision making, entrepreneurial teams, conflict and entrepreneurial cognition. Then, the core of the papers encountered and selected for this research is analyzed and discussed. Finally, conclusions are drawn and suggestions on future research as well as new areas of research are presented.

Findings – A preliminary result of this review is that the studies on this topic are quite rare. We found out that most of the papers published about this issue, in particular the most recent ones, hold a cognitive perspective. Furthermore, the literature shows an intense debate on diversity and conflict. We propose as future areas of research the analysis of the impact of shared ownership, team-level heuristics and biases and communication on decision making process. Moreover, the study on multi-level structure of decision making and on the relationships between decision making and power structures, as well as on the connections between decision making and emotional and interpersonal aspects are other suggested future areas of research.

Originality/value – While there is a huge amount of contributions on individual decision making, this is the first literature review which addresses the topic of team dynamics in entrepreneurial

decision making. The classical view of the firm founded by a sole entrepreneur is an image that does not represent the reality of most firms. Thus, new models and concepts are needed to deeply understand the actual behavior of teams managing firms. This review represents a preliminary step towards this direction: as it provides a snapshot of the current literature and presents the gaps to be filled.
Keywords Team dynamics, Entrepreneurial team, decision making, conflict, cognition
Paper type Literature review

Introduction

This literature review intends to seek in the extant management and entrepreneurship literature works on team dynamics in entrepreneurial decision making. While the individual entrepreneurial decision making has been deeply investigated - a recent review on this topic has been written by Shepherd and his colleagues (2015) - the role of the team dynamics in entrepreneurial decision making is still largely unexplored. Our review aims at filling this gap focusing on the team level of entrepreneurial decision making, bringing together contributions which have analyzed different aspect of this phenomenon separately.

In order to do so, we carried out a systematic literature review on 30 management and entrepreneurship journals. We found 48 studies which directly address our research goal.

The contributions traced in the literature are very different and "scattered", both in the topics covered and in reference theories. The literature seems to address different aspects of the issue (e.g. decision making process or the study of team dynamics in entrepreneurial teams) each in its own right. For example, the comprehensiveness of decision making process is put in relation with environmental variables and the issue is dealt with a firm-level and not with a team-level focus of analysis. Some papers presented in this literature review are exceptions.

It seems that the literature has not yet developed the necessary integration between the different aspects of the team dynamics in entrepreneurial decision making, which by its nature needs a view from multiple perspectives.

The central contribution of this review is to examine the specific phenomenon of the team dynamics in entrepreneurial decision making showing the points of connection among streams of research which have followed for a long time different paths meeting only occasionally: research on decision making process, on entrepreneurial teams, on team dynamics (in particular conflict and behavioral integration) and on entrepreneurial cognition.

On the basis of the literature reviewed we drew a model which integrates different contributions on decision making within entrepreneurial teams (Figure 1). The model synthesizes the state of the art of the current literature; it appears clear that are some areas of research still to be developed, which we will examine in depth in the last paragraph of this paper.

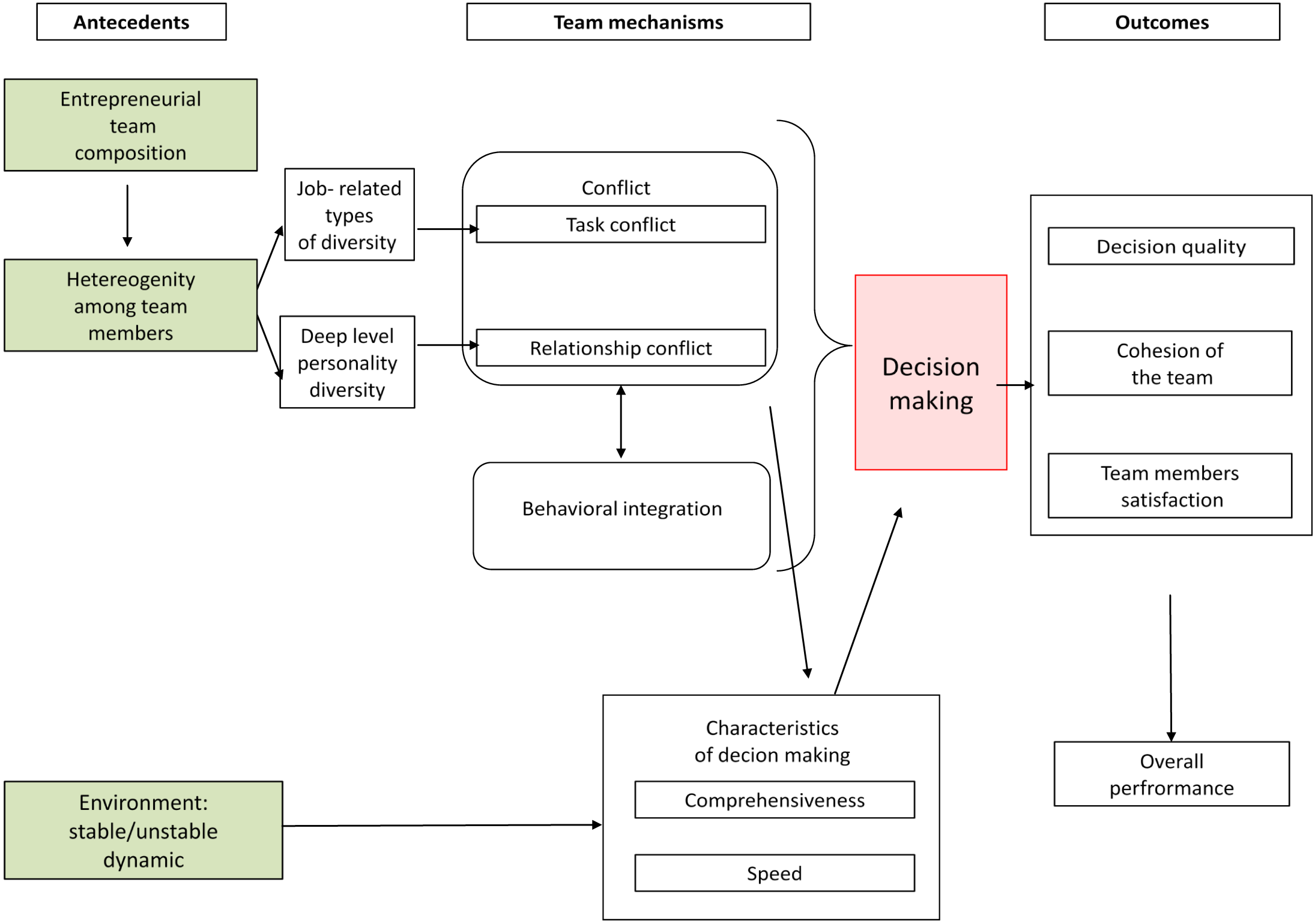
In the model the entrepreneurial team composition and the heterogeneity within the team are antecedents to the team dynamics in entrepreneurial decision making. In particular, heterogeneity of the team results in two main types of diversity: job- related types of diversity and deep level personality diversity which lead to two different types of conflict: task conflict and relationship conflict.

The characteristics of decision making, in particular the most studied which are comprehensiveness and speed, are determined on one hand by the environment (stable, unstable, dynamic), which in this model is an antecedent. On the other hand they are determined by the conflict, which is a team mechanism.

The two types of team mechanism, conflict and behavioral integration, influence each other.

Finally, the outcomes of decision making process are the decision quality, the cohesion of the team and the team member satisfaction. The overall firm performance is the distal outcome.

This review is organized as follows. First, we present the method adopted. Second, we introduce the state of art of the research on decision making process, on entrepreneurial teams, on conflict, on behavioral integration and on entrepreneurial cognition, presenting suggestions on future research on each of these streams of research separately. Finally, we examine the gaps in the literature and we provide some suggestions for future new areas of research, which go beyond and across the streams of the current literature.


Antecedents
Team mechanisms
Outcomes
Entrepreneurial team composition
Hetereogenity among team members
Job- related types of diversity
Deep level personality diversity
Conflict
Task conflict
Relationship conflict
Behavioral integration
Decision making
Decision quality
Cohesion of the team
Team members satisfaction
Overall perfrormance
Characteristics of decion making
Comprehensiveness
Speed
Environment: stable/unstable dynamic

Method

In doing this literature review we followed the steps of the systematic quantitative approach suggested by Pickering and Byrne (2014). The main advantage of this type of review is that it uses methods to assess the literature and choose the relevant papers that are explicit and reproducible. Moreover it allows to evaluate which topics have been examined by researchers in a comprehensive fashion and to identify the gaps in the literature (Pickering and Byrne, 2014). This type of review is particularly suitable for assessing the literature in new and trans-disciplinary fields.

We followed these principal steps: 1. we defined a specific topic; 2. we identified the questions tackled by this literature review; 3. we selected the keywords and the databases in which look for the keywords; 4. we read and assessed each publication, to verify if it was relevant 5. we defined categories to cluster and link together the papers; 6. we presented the core of the papers taken into account.

Following Grégoire et. al (2011) and Shepeherd et al. (2015), who used criterion sampling (Patton, 1990) for their review, we based our review on keyword searches, in our case we looked on 32 journals publishing works related to entrepreneurship and management.

We chose the top 20 management journals on the basis of the impact factor, adding to these Administrative Science Quartely and Management Science, which respectively hold the position 21 and 31 according to the impact factor of 2014 and which were selected for their historical and recognized significance in the management literature.

In addition, the research was carried out on 10 entrepreneurship journals with impact factor, selected from the list contained in a recent paper by Stewart and Cotton (2013).

Overall, the journals in which we carried out the research in are recognized as influential and have been used in numerous other reviews (e.g. Shepherd, 2015). The list of journals on which the research was carried out on is the following:

Academy of Management Annals, Academy of Management Review, Academy of Management Journal, Journal of Management, MIS Quarterly, Journal of Applied Psychology, Journal of Information Technology, Personnel Psychology, Omega- International Journal of Management Science, Organizational Research Methods, International Journal of Management Reviews, Journal of Supply Chain Management, Journal of Operations Management, Organization Science, Journal of Management Studies, Global Strategy Journal, Journal of International Business Studies, Supply Chain Management - An International Journal, Academy of Management Perspectives, Strategic Management Journal, Administrative Science Quarterly, Management Science, Journal of Business Venturing, Family Business Review, International Small Business Journal, International

Entrepreneurship and Management Journal, Small Business Economics, Entrepreneurship & Regional Development, Entrepreneurship Theory and Practice, Journal of Small Business Management, Strategic Entrepreneurship Journal, Creativity and Innovation Management.

The choice of keyword research within the journals sites, rather than within databases such as EBSCO, or as Scopus (used in other reviews, e.g. Greogoire et. al., 2011), has some specific purposes: 1. the peer-reviewed papers are today the most important and recognized vehicle of academic knowledge, so we limited the search to them rather than include other types of publications (e.g. books chapters, etc.); 2. we believe that impact factor, even if it has been criticized by some scholars, is a valuable tool for identifying journals that contain the most quoted and relevant articles, which reflect the present evolution of the literature; 3. our aim was to analyze the management and entrepreneurship literature in order to see how the issue of decision making in entrepreneurial teams is dealt within them; that's why we limited the search only to some journals, instead of extending it to all journals (for example to sociology ones).

We have looked for these keywords:

EITHER entrepreneu*/founder*/venture*/enterprise*/start-up* AND decision* AND team

We searched them in the titles and abstracts.

In the case of some journals, when it was not possible to use the AND operator by choosing the single journal, the Scopus search engine was used.

At the beginning, we searched for the only words "entrepreneu* AND decision*": we obtained very varied results, the vast majority of the cases was not focused on the issue of decision making or regarding the individual dimension of the decision. We therefore decided, following also Grégoire et. al. (2011), to carry out the keyword search at the same time referring to both the entrepreneurial and team dimension of decision making to identify the contributions that are located in the intersection between different streams of research.

In order to make the research more complete, we then searched into the references of the retrieved articles other relevant papers, as suggested by some authors (Randolph, 2009; Pickering and Byrne, 2014). We decided to include also some papers published many years ago because: 1. the old papers we included are seminal and influential still in the present day literature; 2. we believe that management and entrepreneurship are disciplines in which even obsolete papers can gain renewed success, as paradigms and perspectives may change over time (Pickering and Byrne, 2014).

Instead, we excluded papers that: 1. were not focused on decision making; 2. concerned the individual dimension of the decision or the collective dimension not at the team level (e.g. at the employee or users level); 3. did not concern entrepreneurial organizations; 4. the analysis was specifically aimed at large firms managed by top management teams with topics distant from issues

of interest to the entrepreneurial teams: articles on the relationship between the CEO and TMT and articles on the relationship between the international joint ventures and parent firms fall into this last category.

Finally, we included 48 papers. You can find a summary of the articles included in the review in table 1. Some of them deal with top management teams; we included these papers only the papers which are topics which are interesting for the study of decision making within entrepreneurial teams. We considered also some contributions on the homogeneity among team members because they help to explain the team dynamics in entrepreneurial decision making. We categorized the detached papers into topics which represent all the aspects analyzed in the literature which are related to the team dynamics in entrepreneurial decision making: decision making, entrepreneurial teams, heterogeneity among team members, conflict and behavioral integration. For its value in the understanding of the issue, the cognitive perspective is taken into account.

Results

Looking at table 1 we can notice some preliminary insights. First we can observe that the majority of the papers deals with the topic of conflict. Moreover, we can notice that only few papers are published in entrepreneurship journals: this can be a sign that in entrepreneurship literature the topic of decision making has been so far overlooked. Looking at the years of publication we can see that papers holding a cognitive perspective have been published in more recent years.

In the following paragraphs, we examine each category in more details.

Table 1. Articles included in the review

Topic	Paper reference	Publication year	Journal	Type of paper (theorical, empirical)
1. Characteristics of the decision making (comprehensiveness, speed)	Fredrickson J. W. and Iaquinto A.L., 1989. Inertia And Creeping Rationality In Strategic Decision Processes, *Academy of Management Journal*, 32: 516-542	1989	Academy of Management Journal	Empirical
	Eisenhardt KM., 1989. Making fast strategic decisions in high velocity environments. *Academy of Management Journal*, 32: 543–576	1989	Academy of Management Journal	Empirical
	Talaulicar, T., Grundei, J., and Van Werder, A., 2005. Strategic decision making in start-ups: The effect of top management team organization and processes on speed and comprehensiveness. *Journal of Business Venturing,* 20: 519–541	2005	Journal of Business Venturing	Empirical
	Souitaris, V., and Maestro, B. M. M., 2010. Polychronicity in top management teams: The impact on strategic decision processes and performance of new technology ventures, *Strategic Management Journal*, 31: 652–678	2010	Strategic Management Journal	Empirical
	Mihalache, O. R., Jansen, J. J. P., Van den Bosch F. A. J. and Volberda H. W., 2014. Top Management Team Shared Leadership and Organizational Ambidexterity: a Moderated Mediation Framework, *Strategic Entrepreneurship Journal*, 8: 128–148	2014	Strategic Entrepreneurship Journal	Empirical
2. Heterogeneity among team members	Hambrick D.C., Mason P.A., 1984. Upper echelons: the organizations as a reflection of its top managers, *Academy of Management Review*, 9: 193–206	1984	Academy of Management Review	Theoretical
	Eisenhardt, K. M. and Schoonhoven, C. B., 1990. Organizational growth: Linking founding team, strategy, environment and growth among U.S. semiconductor ventures, *Administrative Science Quarterly*, 35: 504–529	1990	Administrative Science Quarterly	Empirical
	Wiersema, M. F. and Bantel, K. A., 1992. Top management team demography and corporate strategic change. *Academy of Management Journal*, 35: 91-121	1992	Academy of Management Journal	Empirical
	Eisenhardt, K. M., Kahwajy, J. L. and Bourgeois, L. J., 1997.Conflict and strategic choice: How top management teams disagree. *California Management Review*, 39: 42–62	1997	California Management Review	Empirical
	Harrison, D. A., Price, K. H. and Bell, M. P., 1998. Beyond relational demography: Time and the effects of surface-and deep-level diversity on work group cohesion. *Academy of management journal*, 41: 96-107	1998	Academy of management journal	Empirical
	Jehn, K. A., Northcraft G. B. and Neale M. A., 1999. Why differences make a difference: A field study of diversity, conflict, and performance in workgroups. *Administrative Science Quarterly,* . 44: 741–763	1999	Administrative Science Quarterly	Empirical
	Simons, T., L. H. Pelled, K. A. Smith. 1999. Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. *Academy of Mangement Journal,* 42: 662–673	1999	Academy of Mangement Journal	Empirical
	De Dreu, C. K. W. and West, M. A., 2001. Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology,* 86: 1191–1201	2001	Journal of Applied Psychology	Empirical
	Moynihan, L. M.and Peterson, R. S., 2001. A contingent configuration approach to understanding the role of personality in organizational groups. *Research in*	2001	Research in organizational behavior	Theoretical

	organizational behavior, 23: 327-378			
	Li, J. T. and Hambrick, D. C., 2005. Factional groups: A new vantage on demographic faultlines, conflict, and disintegration in work teams. *Academy of Management Journal,* 485: 794–813	2005	Academy of Management Journal	Empirical
	Olson, B. J., Parayitam, S. and Bao, Y., 2007. Strategic decision making: The effects of cognitive diversity, conflict, and trust on decision outcomes. *Journal of Management,* 33: 196–222	2007	Journal of Management	Empirical
3. Conflict	Guetzkow, H. and Gyr, J., 1954. An analysis of conflict in decision-making groups. *Human Relations,* 7: 367–381	1954	Human Relations	Empirical
	Pondy, L. R., 1967. Organizational conflict: Concepts and models. *Administrative Science Quarterly,* 12: 296–320	1967	Administrative Science Quarterly	
	Cosier, R. and Rose, G., 1977. Cognitive conflict and goal conflict effects on task performance. *Organizational Behavior and Human Decision Processes*, 19: 378–391	1977	Organizational Behavior and Human Decision Processes	Empirical
	Schweiger, D. M., Sandberg, W. R., & Ragan, J. W., 1986. Group approaches for improving strategic decision making: A comparative analysis of dialectical inquiry, devil's advocacy, and consensus. *Academy of management Journal*, 29: 51-71	1986	Academy of management Journal	Empirical
	Schweiger, D. M., Sandberg, W. R., & Rechner, P. L., 1989. Experiential effects of dialectical inquiry, devil's advocacy and consensus approaches to strategic decision making. *Academy of Management journal*, 32: 745-772	1989	Academy of Management journal	Empirical
	Schwenk, C. R., 1990. Effects of devil's advocacy and dialectical inquiry on decision making: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 47: 161–176	1990	Organizational Behavior and Human Decision Processes	Meta analysis
	Murnighan, J. K. and Conlon, D. E., 1991. The dynamics of intense work groups: A study of British string quartets. *Administrative Science Quarterly*, 36: 165-186.	1991	Administrative Science Quarterly	Empirical
	Priem, R., and Price K., 1991. Process and outcome expectations for the dialectical inquiry, devil's advocacy, and consensus techniques of strategic decision making. *Group and Organization Studies*, 16: 206-225	1991	Group and Organization Studies	Empirical
	Schwenk, C., and Cosier, R.,1993. Effects of consensus and devil's advocacy on strategic decision-making. *Journal of Applied Social Psychology*, 23: 126-139.	1993	Journal of Applied Social Psychology	Empirical
	Jehn, K., 1995. A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly,* 40: 256–282	1995	Administrative Science Quarterly	Empirical
	Amason, A. C., 1996. Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *Academy of Management Journal*, 39: 123-128	1996	Academy of Management Journal	Empirical
	Amason, A. C. and Mooney, A. C., 1999. The effects of past performance on top management team conflict in strategic decision making. *International Journal of Conflict Management, 10:* 340–359	1999	International Journal of Conflict Management	Empirical
	Schulz-Hardt, S., Jochims, M. and Frey, D., 2002. Productive conflict in group decision making: Genuine and contrived dissent as strategies to counteract biased information seeking. *Organizational Behavior and Human Decision Processes*, *88*:	2002	Organizational Behavior and Human Decision Processes	Empirical

	563–586			
	De Dreu, C. K. and Weingart, L. R., 2003. Task versus relationship conflict, team performance, and team member satisfaction: a meta-analysis. *Journal of applied Psychology*, 88: 741- 749	2003	Journal of applied Psychology	Meta- analysis
	Peterson, R. S. and Behfar, K. J., 2003. The dynamic relationship between performance feedback, trust, and conflict in groups: A longitudinal study. *Organizational Behavior and Human Decision Processes,* 92: 102–112	2003	Organizational Behavior and Human Decision Processes	Empirical
	Schulz-Hardt, S., Brodbeck, F. C, Mojzisch, A.; Kerschreiter, R. and Frey, D., 2006. Group decision making in hidden profile situations: Dissent as a facilitator for decision quality, *Journal of Personality and Social Psychology*, 91: 1080-1093	2006	Journal of Personality and Social Psychology	Empirical
	Parayitam, S. and Dooley, R. S., 2007. The relationship between conflict and decision outcomes: Moderating effects of cognitive- and affect based trust in strategic decision-making teams. *International Journal of Conflict Management,* 18: 42–73	2007	International Journal of Conflict Management	Empirical
	Sidle, S. S., 2007. Do Teams Who Agree to Disagree Make Better Decisions?, *Academy of Mangement Perspectives*, 21: 74-75	2007	Academy of Management Perspectives	Theoretical
	Jehn, K. A., Greer, L. L., Levine, S. and Szulanski, G., 2008. The effects of conflict types, dimensions, and emergent states on group outcomes. *Group Decision and Negotiation,* 17: 465–495	2008	Group Decision and Negotiation	Empirical
	Greer, L. L., and van Kleef, G. A., 2010. Equality versus differentiation: the effects of power dispersion on group interaction. *Journal of Applied Psychology*, 95: 1032 - 1044	2010	Journal of Applied Psychology	Empirical
	De Wit, F. R., Greer, L. L. and Jehn, K. A., 2012. The paradox of intragroup conflict: a meta-analysis. *Journal of Applied Psychology*, 97: 360 - 390	2012	Journal of Applied Psychology	Empirical
4. Behavioral integration	Bettenhausen, K., and Murnighan, J.K., 1985. The emergence of norms in competitive decision-making groups. *Administrative Science Quarterly*, 30: 350-372	1985	Administrative Science Quarterly	Empirical
	Brett, J. M., 1991. Negotiating group decisions. *Negotiation Journal*, 7: 291-310	1991	Negotiation Journal	Empirical
	Moye, N. A. and Langfred, C. W., 2004. Information sharing and groupconflict: Going beyond decision making to understand the effects of information sharing on group performance. *International Journal of Conflict Management,* 154: 381–410	2004	International Journal of Conflict Management	Empirical
	Brodbeck, F. C., R. Kerschreiter, A. Mojzisch, S. Schulz-Hardt, 2007. Group decision making under conditions of distributed knowledge: The information asymmetries model, *Academy of Management Review*, 32: 459–479	2007	Academy of Management Review	Theoretical
	Boone, C. and Hendriks, W., 2009. Top management team diversity and firm performance: Moderators of functional-background and locus-of-control diversity, *Management Science*, 55:165-180	2009	Management Science	Empirical
	Wong, E.M., Ormiston, M.E., and Tetlock, P.E., 2011, The effects of top management team integrative complexity and decentralized decision making on corporate social performance, *Academy of Management Journal*, 54: 1207-1228	2011	Academy of Management Journal	Empirical
5. Cognitive perspective	Papenhausen, C. , 2006. Half full or half empty: The effects of top managers' dispositional optimism on strategic decision-making and firm performance. *Journal of Behavioral and Applied Management,* 7: 103– 115	2006	Journal of Behavioral and Applied Management	Empirical

Brodbeck, F. C., R. Kerschreiter, A. Mojzisch, S. Schulz-Hardt, 2007. Group decision making under conditions of distributed knowledge: The information asymmetries model, *Academy of Management Review*, 32: 459–479	2007	Academy of Management Review	Theoretical
West, G. P., 2007. Collective Cognition: When Entrepreneurial Teams, Not Individuals, Make Decisions, *Entrepreneurship Theory and Practice*, 31: 77–102	2007	Entrepreneurship Theory and Practice	Theoretical
Souitaris, V., and Maestro, B. M. M., 2010. Polychronicity in top management teams: The impact on strategic decision processes and performance of new technology ventures, *Strategic Management Journal*, 31: 652–678	2010	Strategic Management Journal	Empirical
Grégoire, D. A., Corbett, A. C. and McMullen, J. S., 2011. The cognitive perspective in entrepreneurship: An agenda for future research, *Journal of Management Studies*, 48: 1443-1477	2011	Journal of Management Studies	Theoretical
Wong, E.M., Ormiston, M.E., and Tetlock, P.E., 2011, The effects of top management team integrative complexity and decentralized decision making on corporate social performance, *Academy of Management Journal*, 54: 1207-1228	2011	Academy of Management Journal	Empirical

Decision making

The issue of the decision making and in particular of strategic decision making has attracted the attention of many researchers who have contributed to establish an extensive literature on this subject, demonstrating its importance in shaping the course of a firm. As decision making is one of the most important functions of managers, the implications for practice of the research on this issue is well recognized in the literature.

The most used definition is the one taken from the seminal work of Mintzberg and colleagues (1976): "[This paper] defines a decision as a specific commitment to action (usually a commitment of resources) and a decision process as a set of actions and dynamic factors that begins with the identification of a stimulus for action and ends with the specific commitment to action. [...] Strategic simply means important, in terms of the actions taken, the resources committed, or the precedents set" (Mintzberg et al.,1976: 246).

The focus within the vast literature on decision making has changed over the decades, as the decision making is a complex phenomenon that can be seen from different points of view.

At the origin of the subject there is the debate on human cognitive limitations between expected utility theory and Simon 's bounded rationality (Simon, 1955; Simon, 1979; Simon, 2000).

Simon challenges the basis of the classical theory of (omniscient) rationality, introducing the notion of "bounded rationality", which refers to the deviation from omniscience, stemming from "failures of knowing all the alternatives, uncertainty about relevant exogenous events, and inability to calculate consequences [of the choices]" (Simon, 1979: 356).

The classical theory is attractive because, setting the characteristics of the environment and under the assumptions of perfect rationality it is possible to determine the choice that maximize the utility of decision-maker. Whereas, behavioral theories of rational choice, which include the notion of bounded rationality, point out that under identical environmental conditions, different decision making process can produce different firm behaviors. Thus, the decision process gains in importance. As the decision maker doesn't know ex-ante all the alternatives and consequences, he must search for them. According to Simon, this search doesn't meet the utility maximization criterion but the satisficing criterion, according to which the decision maker chooses the alternative that meet his (dynamic) levels of aspirations, saving efforts and resources in respect to an exhaustive search.

Another influential criticism to the classical model of rational choice comes from Mintzberg and his colleagues (1976). In particular they deny that the decision making is a linear process characterized by a sequence of phases: identification, development and selection. On the contrary, they point out

that a decision stems from a vague idea about alternatives and that the choice comes out only through discontinuous and recurrent attempts (Mintzberg et al.,1976).

This early discussion about perfect and bounded rationality "is no longer very controversial, [as the] empirical research clearly supports the existence of cognitive limits to the rational model" (Eisenhardt and Zbaracki, 1992: 22).

In more recent years, the focus of literature on decision making has shifted from controversy on the degree of rationality of the decision-making process into determining the organizational and environmental variables that determine the characteristics of decision making (Forbes, 2007).

In particular the mostly studied characteristics of decision making process are the decision making comprehensiveness and speed.

Decision making comprehensiveness is defined as "the extent to which organizations attempt to be exhaustive or inclusive in making and integrating strategic decisions" and as a "measure of rationality" (Fredrickson and Mitchell, 1984: 399). This entails intensively searching and selecting among a wide range of alternatives and information the most appropriate ones and evaluating and balancing costs and risks. This also implies "the conscious integration of strategic decisions to insure that they form a consistent whole" (Fredrickson and Mitchell, 1984: 401).

Due to extensive information search, decision comprehensiveness reduces groupthinking, opportunism and self-interests of individual TMT members (Forbes, 2007) as well as the escalation of personal commitment to a certain course of action (Mihalache et. al., 2014).

However, the suitability of comprehensive processes depends on the setting.

In stable environments comprehensiveness improves the performance (Fredrickson, 1984). In unstable environments, instead, a negative relationship between comprehensiveness and organization performance is observed (Fredrickson and Mitchell, 1984). Incremental models, in which the problem is continually re-defined and adjusted to make it more manageable, are more appropriate in these environments (Mintzberg, 1973).

In particular in environments which are both unstable and unanalyzable comprehensiveness can impair firm performance (Souitaris and Maestro, 2010).

Unanalyzable environments are characterized by ambiguity, which is uncertainty and difficulties in understanding caused by multiple and incompatible interpretations of a situation (Atuahene-Gima and Li, 2004). In such environments information quantity, which is costly and often misleading, doesn't help to decrease ambiguity. On the opposite quality information is needed, since it can change understanding. In particular decision making processes focused on the quality of insightful information, gathered in a nonsystematic way, are suitable in this type of environments (Souitaris and Maestro, 2010).

Besides being linked to the environment, comprehensiveness is also related with organizational size and characteristics of the top management team, in particular with the executive team tenure and the level of continuity team (Fredrickson and Iaquinto, 1989).

Organizational size has important implications for strategic decision processes: consistent with Mintzberg's observation that firms evolve to a planning mode as they grow (Mintzberg, 1973), Fredrickson and Iaquinto point out that an increase in size is accompanied by an increasingly comprehensive decision process, i.e. by an "increasingly rational decision making" (Fredrickson and Iaquinto, 1989: 520). In firms that got smaller, comprehensiveness declined.

As for the dynamic features of executive teams, they report a significant, positive relationship between dynamic features of executive teams and comprehensiveness. This conclusion of their study is divergent from a part of the literature, according to which shared understanding of the firm's typical decision process by long standing executive-team members lead to rely on established decision-making procedures (Cyert and March, 1963; Staw et al., 1981; Tushman and Romanelli, 1985). In this way the level of comprehensiveness should decrease.

Fredrickson and Iaquinto explain this discrepancy with two arguments. First, they observe that the effects of tenure and group composition on decision processes are substantially different at the strategic level than at the operating level by reason of contextual complexities of strategic processes. Second, they point out that there are general forces that encourage increased comprehensiveness and rationality, such as the increasing professionalization of management (Fredrickson and Iaquinto, 1989).

All together, these positive relationships create a cohesive pattern: an increase in executive-team tenure, which tends to be accompanied by high levels of team continuity and increase in organizational size, is associated with increased comprehensiveness. These conditions contribute to the so called creeping rationality, which is caused by increasing expectations of rationality and is more likely manifest in the bureaucratic structures (Fredrickson and Iaquinto, 1989).

Comprehensiveness of decision making is also affected by the distribution of leadership influence within the team. Indeed, shared leadership drives teams to engage in comprehensive decision making. It stimulates information sharing between team members and it provides a wide range of resources for the decision making process in terms of a greater amount of skills and perspectives, since they are from all team members instead of the sole CEO (Mihalache et. al., 2014).

Another feature of the decision-making process studied in the literature is the decision speed.

Decision speed enables firms to exploit opportunities before they disappear and thus enhances firm performance in dynamic environments (Eisenhardt, 1989a; Souitaris and Maestro, 2010).

The acquisition and distribution of updated and relevant information is found as fundamental in order to achieve an effective decision making (Kotter, 1982; Eisenhardt, 1989a),

In contrast with prior research that indicated that comprehensiveness slows the strategic decision-making process (Fredrickson and Mitchell, 1984), Eisenhardt points out that top management teams making fast decisions use more, not less, information than slower decision makers teams. Indeed they rely on real-time information about the external context and internal achievements, such as engineering improvements and they review this information in regular meetings where the entire team is involved. Thus, these teams look at more data, more often and the result is deep intuition and quick understanding of change (Eisenhardt, 1989a).

A way through which TMT members can acquire 'insightful' information via unscheduled interactions with other people, external or internal to the organizations, is represented by the employment of "polychronicity" (Souitaris and Maestro, 2010).

"Polychronicity" is the "extent to which TMT members mutually prefer and tend to engage in multiple tasks simultaneously or intermittently instead of one at a time" (Souitaris and Maestro, 2010: 653; see also Hall, 1959), in other words it is the preference and tendency to "'switch' attention between tasks" (Souitaris and Maestro, 2010: 653). This lead to the propensity of accepting interruptions, favoring "the attendance of unscheduled interpersonal interactions over planned tasks" (Souitaris and Maestro, 2010: 657).

A polychronic attitude helps to gather insightful information which allows to early eliminate unsuitable alternatives, saving time and analysis and focusing the team members evaluation effort on key elements of the decision, increasing in this way the decision speed (Souitaris and Maestro, 2010).

Also considering simultaneously multiple alternatives instead of consider sequentially fewer alternatives helps to make rapid decisions (Eisenhardt, 1989a).

Moreover, the way in which conflict are solved affects the decision speed. Teams which make fast decisions look for consensus, proactively dealing with conflict, but if no consensus emerges make the decision (Eisenhardt, 1989). According to Eisenhardt , the power centralization in not linked to the decision making speed, as "some autocrats are fast, but others are slow" (Eisenhardt, 1989a: 559).

As you can see in the model in Figure 1, decision making process is affected also by the conflict among team members.

As the conflict is linked to the entrepreneurial team composition and to heterogeneity of the team (which in our model are antecedents), in the following paragraph we will examine the literature on this issues, in order to highlight the interactions between these variables.

Future research on decision making

The connections between characteristics of decision making and antecedents and outcomes of decision making deserve more attention.

What is the relationship between the team composition and the decision making comprehensiveness and speed?

As for the outcomes most of the studies relate decision making process and its characteristics to decision quality but little is known on the consequences on other proximal outcomes, like cohesion of the team and team members satisfaction, which also affect overall performance of the firm.

Another interesting future research direction could be to investigate the relationship between models of team organization and characteristics of decision making process. A recent paper, for example, shows that a the department model, which refers to the "horizontal division of labor within the TMT" (Talaulicar at al., 2005, p. 520) increases both decision comprehensiveness and speed. Whereas the CEO model, in which one team member is hierarchically higher up respect to the other members, does not lead to faster decisions (Talaulicar at al., 2005).

We suggest that holding a cognitive perspective would be helpful in order to obtain a deeper understanding of these relationships. Moreover, we believe that entrepreneurial teams are peculiar in some aspects pertaining these relationships.

Entrepreneurial teams

Although data suggest that companies are often founded by entrepreneurial teams rather than by individuals (Kamm et . al, 1990; West, 2007; Schjoedt and Kraus, 2009; De Mol et al., 2015) and the benefits of having more than one founder for the creation and successful development of an enterprise have been demonstrated in several studies (Cooper and Bruno, 1977; Eisenhardt and Schoonhoven, 1990; Vyakarnam et al., 1999, Kamm et. al, 1990, Birley and Stockley, 2000), research on entrepreneurial teams as area of study is a recent phenomenon which still have little space in the literature.

The reason of this inattention has been attributed to the dominance in the entrepreneurship literature of entrepreneur myth as a "lone hero", "symbolism of self-reliant personal independence" and achievement, which is an important value in the American society (Cooney, 2005: 226).

This trend is changing as there is a growing interest in the issue of entrepreneurial teams (Vyakarnam et al.,1999, Busenitz et. al., 2003).

The most frequently used definition of "entrepreneurial teams" is taken from the original work by Kamm et al. (1990), who describes the entrepreneurial team as a group of two or more persons who set up a business together and share its ownership.

Not all authors agree about this definition (Cooney, 2005; Shepherd and Krueger, 2002; Schjoedt and Kraus, 2009); in particular the presence of the team members to the pre-start-up phase of the firm is debated, as some authors assert that the right time to become a team member does not depend on the phase of the maturation of the firm. The common element which appears in different definitions is the shared and actively participating commitment in the development of the business, which excludes partners such as banks, venture capital firms, and other investment institutions and put the focus only on individuals.

Part of the confusion on definitions seems to be caused by to the overlapping and interchangeable use of two notions actually different: management teams and entrepreneurial teams (Tihula et al, 2009).

A team in which the individuals take part in the management of the firm without sharing ownership is defined as a management team. In the entrepreneurial team, on the other hand, the members share entrepreneurial risk. A key difference between the two types of teams is the position of the members: in entrepreneurial teams the control positions are held by the same members who hold ownership, whereas in management teams members work in leadership positions.

Large firms are more likely to be managed by managerial teams because their size results on a formal role definition. Small firms, instead, tend to be managed by entrepreneurial teams, because at their foundation more diverse knowledge is needed.

The distinctive traits of entrepreneurial teams have been basically overlooked in the literature, which has focused mainly on top management teams, probably also on account of the greater interest for large companies, while the studies on small enterprises are rare. Given this shortage of contributions directly concerning entrepreneurial firms, in this review papers referring to the "top management teams" have been included where the findings of the research seemed applicable also to entrepreneurial firms. Instead, papers that clearly were referring to large companies have been excluded (e.g. Ling et. al., 2008).

The literature on entrepreneurial teams focuses mainly on characteristics of the members in relation to the selection, addition and exit of entrepreneurial team members (Boeker and Karichalil 2002; Ruef at al., 2003, Ucbasaran et al., 2003, Forbes et al., 2006, Vanaelst et al. 2006). Some studies deal with the dynamics within the team which improve the firm performance (Watson et. al, 1995; Cohen and Bailey, 1997). However, also the study of the effects of heterogeneity among the team

members, which is crucial in order to understand the decision making process, is a relevant issue in research on entrepreneurial teams.

Heterogeneity among team members

Research suggests that the success of entrepreneurial firms depends greatly on characteristics of the founding team.

Large (i.e., 4–5 members) and diverse (in age and experience) teams are much more likely to set up entrepreneurial firms with substantial growth (Eisenhardt and Schoonhoven, 1990).

Indeed, in these firms more people contribute to the complex job of foundation of the firm bringing their different and peculiar skills. Moreover, founding conditions (the founding team and the market in which the firm operates) are very consequential as the course set at the foundation by top management teams often becomes difficult to change because organizational structure as well as resources and commitment are locked in (Eisenhardt and Schoonhoven, 1990).

Eisenhardt observes that building heterogeneous teams is a way through which create high conflict between team members (Eisenhardt 1997). Indeed, when teams members differ across demographic characteristics such as functional background, education, gender, ethnicity or socioeconomic origin, they are likely to have conflict (Eisenhardt 1997).

In particular age differences create strong conflicts, especially when the spread is of twenty or more years. On the opposite, teams members which are similar in that demographic characteristics tend to think alike and so there is low conflict within the team (Eisenhadrt 1997).

On the other hand when team members come from different backgrounds, they don't understand the other's point of view. The consequence is that they interact few infrequently, or only in pairs, and they never engage in a real discussion on issues. In that cases they fail to have constructive conflict and the apparent agreement is actually apathy and disengagement (Eisenhadrt 1997).

A very widespread theory among studies on top management teams is the *upper echelons theory* (Hambrick and Mason, 1994; Hambrick, 2007), according to which organizational decisions and consequently the outcomes and performance are the "reflections of the values and cognitive bases of powerful actors in the organizations" (Hambrick and Mason, 1994: 193), i.e. of the upper echelons characteristics and background. According to this theory there is a link between organizational choices and outcomes and the way top executives select and process information from the context, which in turn depends on a set of personal characteristics. The focus is on the "characteristics of the entire top management teams" (Hambrick and Mason, 1994: 196), in particular on the observable background characteristics (e.g. functional background, education,

tenure in the organization, age, financial position), also used as an indicator of underlying traits, such as complex psychological variables (e.g. locus for control, risk propensity, cognitive style, motivation) which are more difficult to be measured and detected.

Distinguishing different types of diversity appears to be relevant (Simons at. al., 1999). Not all the types of diversity contribute to increase the team total amount of task-related perspectives and skills: more job-related types of diversity (diversity in functional back-ground, education level, tenure and perceived environmental uncertainty) have stronger moderated effects on performance than less job-related one (age diversity) (Simons at. al., 1999).

Moreover different industry experience inside the team brings to different points of view and perspectives and it is linked to the growth of newly founded firms (Eisenhardt and Schoonhoven, 1990).

Boone and Hendriks found that the functional background, which is a knowledge-based diversity improves the team decision making, through the moderating effect of team behavioral integration (Boone and Hendriks, 2009)

Also Jehn and his colleagues observe that informational diversity generates task conflict, which positively affects performance (Jehn et al. 1999).

These studies suggest that heterogeneity in job- related types of diversity (also called knowledge-based diversity) generates constructive task conflict.

On the opposite deep level personality differences generates relationship conflict (Harrison et.al, 1998; Jehn et al., 1999; Moynihan and Peterson, 2001) which have negative effects on team cohesion and decision making.

Boone and Hendriks found that the locus of control diversity, which is a deep level personality trait, has so consequential negative effects that they persist even if team members collaborate and accurately exchange information (Boone and Hendriks, 2009).

The locus of control diversity refers to the individual self-perception as active agent (internal locus of control) or passive agent, i.e. the belief that events have an external origin of control (external locus of control). This trait is related to self-esteem and diligence and creates disagreement on the style and personality of members in make decisions (e.g. risk adverse members vs pro-active members).

Moreover, Jehn and his colleagues point out that also values diversity trigger relationship conflict, which a have negative impact on team cohesion and team member satisfaction (Jehn et al. 1999).

Demographic differences are often used as a proxy of deep level differences (Hambrick and Mason, 1994; Bromiley and Rau, 2015). However, their explicative power is criticized. Harrison and his colleagues underline that demographic surface level differences are less important than deep level

differences (Harrison et al., 1998). Wiersema and Bantel did not find support to the hypothesis that age heterogeneity leads to creativity and innovativeness in decision making, whereas they found a significant association with respect to educational specialization. They observe that demographic variables which are more related to cognitive ability are more representative (Wiersema and Bantel, 1992).

Finally, Moynihan and Peterson notice that are three theoretical approaches to examine the linkage between members' personality and team processes and performance.

According to the universal approach some personality traits, such as emotional stability, are always positively related to team success. The contingency approach looks at task type and organizational culture as moderators between members personality and performance. According to configurational approach members personality traits complement each other. They found empirical support for each of these theoretical approach (Moynihan and Peterson, 2001).

Future research on entrepreneurial teams and heterogeneity among team members

The issue of decision making appears to be overlooked in the research on entrepreneurial teams.

It seems like that the entrepreneurship literature sets a divide between the founding phase and the running phase of the firm. Instead, we believe that would be interesting to investigate the connections between the two phases, with respect on the presence or absence of changes in decision making process.

As for the diversity among team members we observe that in recent years it has been studied with a cognitive approach and, compared to the past, with greater attention to deep-level psychological differences rather than only demographic ones. We think that this a good direction for future research on this issue.

Conflict

The conflict is a key variable in the decision making process. A huge literature addresses this issue; an exhaustive presentation of this literature goes beyond the purposes of this literature review, thus we will present only some, influential works.

Conflict can be defined as "a process that begins when an individual or group perceives differences and opposition between itself and another individual or group" (De Dreu and Gelfand, 2008).

The issue on whether conflict is beneficial or detrimental to firm performance is very controversial in the literature. Early scholars point out the negative effects of intragroup conflict (Pondy, 1967; Hackman and Morris, 1975; Blake and Mouton, 1984). Conflict can slow the decision making

process (Mintzberg at.al, 1976) and can tear apart the decision making team. Moreover, it can weaken the consensus and the cohesion among team members, which are important to achieve high performance, even for the fact that the team have to make more decisions over time and negative feelings can undermine the quality of following decisions (Amason, 1996).

Additionally, consensus is more functional than conflict in preserving harmony within the team; moreover it increases team members satisfaction and willingness to keep on working together (Scweiger et al., 1986).

However the lack of conflict, termed by Janis "groupthinking", brings to poor decisions and sometimes to major debacles (Janis, 1982; Wiersema and Bantel, 1992; Jehn, 1995 - note that the Janis's work deals with a series of high-profile public decisions; however, the notion of "groupthinking" gained great success in management and entrepreneurial literature). Indeed, in teams that look for consensus and give more importance to harmony than to critical evaluation the members are inclined to seek support and confirmation of their points of view and reject contrasting opinions. This tendency to conform to the pressure of the team leads to a lower mental efficiency and a worst reality testing and judgment (Janis, 1982).

According to Eisehardt and her colleagues, often conflict is minimal in top management teams and, as low level of conflict brings to poor decision quality, it is worth to stimulate the conflict within teams in order to improve decision making (Eisehadrt et al., 1997).

At the same line, several papers demonstrate that the critical evaluation process is a crucial factor in effective decision making. Decision making processes which comprise conflict, in particular dialectical inquiry and devil's advocacy, lead to higher quality recommendations and assumptions than consensus approaches (Scweiger et al., 1986; Schweiger et al., 1989; Schwenk, 1990).

The diversity of perspectives that can cause conflicts within teams brings to a more accurate and creative decision making process and thus to better decisions (Eisenhardt, 1989; Eisenhardt and Zbaracki, 1992; Eisenhardt et. al., 1997; Schulz, Hardt et al, 2006). Conflict leads to the consideration of more alternatives, to a richer set of possible solutions, to a deeper understanding of the issues and, overall, to significantly more effective decision making.

According to Simons and his colleagues (1999) conflict is not only a mediating variable between diversity among team members and decision making quality but it has also a moderating role. This means that in order to make use of the diversity among members the team has to engage in a process, the conflict, that allows the benefits of heterogeneity to emerge. On the opposite, if diversity is not integrated in such a way, the coordination costs will be greater than the benefits, with negative consequences on performance (Simons at al., 1999).

These contrasting results "pose a dilemma in selecting a decision making method. On the one hand, conflict improves decision quality; on the other, it may weaken the ability of a group to work together in the future", in particular for ongoing groups like top management teams (Scweiger at. al., 1986: 67).

Jehn (1995) and Amason (1996) solve this dilemma differentiating between task and relationship conflict (Amason refers to them as cognitive conflict and affective conflict respectively).

Task conflict is focused on differences about interpretation of facts and on finding solutions to achieve objectives. The relationship conflict is emotional and focused on interpersonal disputes or incompatibilities. The two types of conflict often co-occur, as task conflict can inadvertently trigger relationship conflict (Amason, 1996; De Wit et al, 2012). Indeed relationship conflict usually "emerges when cognitive disagreement is perceived as personal criticism" or when "one team member tries to gain influence at the expense of others" (Amason, 1996: 129).

Relationship conflict is generally found to be detrimental for decision quality, cohesion of the team and satisfaction of team members (Jehn, 1995; Amason, 1996; De Dreu and Weingart, 2003; Li and Hambrick, 2005; De Wit et al., 2012). Indeed relationship conflict distract team members from the accomplishment of the task and create a climate of hostility and anxiety.

As for the task conflict, the issue is more complicated and debated. Some authors underlines the negative effects of task conflict (De Dreu and Weingart, 2003; Li and Hambrick, 2005), supporting the information-processing perspective by Carnevale and Probst (1998) according to which task conflict increases cognitive load, thus interfering with cognitive flexibility and creative thinking.

Other authors stress the idea that under some conditions the task conflict could be beneficial to team performance, in doing so applying a contingency approach. A main moderating variable is the task type (Jehn, 1995). Decision making is a complex and non-routine task, which involve the search of a solution to a problem without a demonstrable right answer (McGrath, 1984). In this case different opinions and even disagreement are required in the assessment of issues and evaluation of possible options so that task conflict can be beneficial (Jehn, 1995). Note that this conclusion contrasts with the information-processing perspective, according to which conflict interferes especially with complex tasks, which require high level of cognitive activity (De Dreu and Weingart, 2003).

Moreover, the conflict dynamics are affected by the organizational level of the team. In particular, in teams which are higher up in the organizational hierarchy, such as top management teams, a power structures that allow equality, such as shared leadership, may be effective in facilitating conflict resolution (Greer and van Kleef, 2010). Indeed, top management team shared leadership stimulates cooperation during conflicts because it brings to give more importance to the entire

organization than to self interest, it supports the development of shared perceptions, emotions and aspirations and a sense of team membership (Mihalache et. al., 2014).

De Wit and his colleagues found that in top management teams task conflict is more positively related to performance than in lower level teams (De Wit et al., 2012). Moreover, in these teams the correlation between task conflict and relationship conflict is weaker than in lower level teams. This suggest that top management teams are more capable in preventing task conflict from becoming relationship conflict (De Wit et al., 2012)

At least, the intensity of conflict appears to be determinant. According to Schulz-Hardt and his colleagues (2006) more intense discussions lead to better decisions, because they bring hidden profiles to the surfacing (Schulz-Hardt, 2006). On the opposite Jehn observed that it exists an optimal level of task conflict under which there is a disfunctional complacency without critical assessment of information and upon which the conflict interferes with the performance (Jehn, 1995).

Also the effects of task conflict on team member satisfaction is debated. According to some authors the task conflict have a positive effect on team members satisfaction, in particular when the team creates an open and collaborative environment (Amason, 1996; Eisenahrdt et al., 1997; Dreu and Weingart, 2003). Indeed, as team members debate their perspectives, they feel that decision-making process is fair and open, as they contribute to it.

According to other authors task conflict decreases team member satisfaction, even in the cases in which it increases performance (Jehn, 1995); however the effects of task conflict on satisfaction are less negative than in the case of relationship conflict (De Wit et al., 2012).

The same can be said for team cohesion (De Wit et al., 2012); also in this case some authors stress the positive effects of task conflict (Amason, 1996; Eisenahrdt et al., 1997)

In addition to the conflict in itself the different ways of managing conflicts appear to be relevant in boosting the positive effects of conflict and reducing the negative ones (Eisenhardt, 1989a; Eisenhardt et. al., 1997).

Three levers that can help teams to encourage and nurture constructive conflict are create frequent interactions, cultivate distinct roles and count on multiple-lens heuristics (Eisenhardt et al. 1997).

Frequent interactions between team members increase the understanding of other's position and allow also individuals to better sharpen and formulate opinions, through debate and discussion. Moreover, knowing each other creates a familiarity between team members that allows them to feel more prone to express conflict.

Cultivate distinct roles among team members (e.g. Ms. Action, Mr. Steady, Futurist, Counselor, and Devil's Advocate) allows different and peculiar points of view to be represented in the debate. These roles, moreover, represent the fundamental tensions of firm running.

Another tactic is to count on multiple-lens, trough the use of four heuristics: multiple alternatives, multiple scenarios, competitor role playing and overlapping sub-groups. Multiple alternatives refer to the explicit generation of 3-5 alternatives to address a specific issue. In multiple scenarios heuristic team members have to imagine future possible environmental conditions (e.g. market demand, competitors) and to think about decision choices going backward to the present. In competitor role playing heuristic, team members have to hold and represent the positions of relevant stakeholders, e.g. competitors or customers.

Finally, overlapping sub-groups refers to the splitting of small sub-groups which deal with specific issues (e.g. R&D planning) and complementing them with members of other sub-groups in order to obtain some overlapping memberships.

These tactics increase constructive conflict improving team members' understanding on issues and setting conditions under which the cognitive conflict is felt as appropriate and valuable, fostering the members engagement (Eisenhardt et al., 1997).

According to Mihalache and his colleagues cooperation during conflicts is stronger for higher levels of connectedness (Mihalache et. al., 2014)., which measures the relational density of social networks within the firm (Sheremata, 2000),

However, if an honest and open confrontation increases the understanding of issue and boosts performance (Van de Ven and Ferry 1980) it can at the same time favor relationship conflict and produce, ultimately, negative effects (Jehn, 1995). Murnighan and Conlon point out that the conflict-avoidance norms are successful in preventing relationship conflict (Murnighan and Conlon, 1991), while Boone and Hendriks observe that in order to avoid the drawbacks of locus of control diversity the only apparent solution is to limit the interactions between team members, centralizing decision making (Boone and Hendriks, 2009).

Thus, stimulate task conflict appear to be not always beneficial.

Future research on conflict

The theme of the conflict appears crucial in the literature on decision making.

Even if it has been frequently studied and debated several aspects remain to be investigated in particular with reference to the specificity of entrepreneurial teams.

Studies on top management teams reveal than in these type of teams conflict are often minimal or absent. But can the same be said for entrepreneurial teams?

We could expect that in entrepreneurial teams the interactions are more frequent and intense than in top management teams. We could also expect that some insights on relationship conflict and his linkages with task conflict drawn from research on top management teams need some refinements in the case of entrepreneurial teams.

Moreover, would be interesting to deep integrate the cognitive perspective in the study on conflict, for example in a model which comprises team members traits, conflict within team and cognitive aspects of the interaction within team. Also the role of trust and even friendship should be investigated in such a model, taking into consideration the peculiarity of entrepreneurial teams.

Behavioral integration

Another key variable in the decision making process is the behavioral integration, which comprises three main elements: exchange of information, collaborative behavior and joint decision making.

The concept has been introduced by Hambrick, who points out that often the top management teams are not, actually "teams". Real teams are the ones characterized by "behavioral integration", which enhances and capitalizes diversity and conflict among team members. It is not linked to likemindedness or friendship but it is a behavioral (not social) pattern in order to process information and make decision collectively (Hambrick, 1994; Hambrick, 1997).

Boone and Hendriks demonstrate that collaborative behavior, information exchange and decentralized decision making are necessary to capitalize the positive potential of functional background diversity in generating high quality decisions (Boone and Hendriks, 2009). Indeed, to capture the benefits of functional background broadening the information pooling, the information have to be discussed (collaborative behavior) and accurately exchanged. Moreover, more people are involved in the decision making (decision making decentralization) more information is shared, improving the decision quality. Decision making decentralization is the most essential and powerful of all these mechanisms (Boone and Hendriks, 2009).

However, while decentralization of decision making strongly supports functionally diverse teams in being effective, at the same time amplifies the drawbacks of locus of control diversity (Boone and Hendriks, 2009).

These three team mechanisms (exchange of information, collaborative behavior and joint decision making) are identified as able to help team to "de-bias" decision making process (Boone and Hendriks, 2009).

Indeed, the distribution and processing of information are subject to several biases and even if groups count on a broader range of knowledge, ideas and perspectives compared to individuals, they often fail to use it.

According to Brodbeck and his colleagues the failure or success of group decision making process depends on the presence or absence of asymmetries in the distribution of information (prior to group decision making) and asymmetries in the processing of information (during group decision making) (Brodbeck et. al., 2007).

The asymmetries in information prior to decision making refers to situations in which each group member own some shared information but also some unique information that the others don't know. In these cases, the information hold by each individual can lead them to suboptimal solution, while the best choice would become apparent through the sharing of unique information (Brodbeck et. al., 2007). This asymmetric information distribution is called hidden profile because the best solution is hidden to individuals prior the discussion. This is a common situation in team-decision making, usually caused by the division of tasks that bring the team members to access unique information (Sidle, 2007).

In this type of information distribution the group decision can outperform the individual decision whereas in symmetric information distribution (manifest profile) the discussion of unshared information is not critical to the decision quality (Brodbeck et. al., 2007).

The conflict is crucial to the decision quality when there is an hidden profile asymmetric information distribution (Schulz, Hardt et al, 2006; Brodbeck et. al., 2007). Indeed, conflict implies more information sharing and forces team members to pay attention to a wider set of information, lowering the bias in the decision making process (Schulz - Hardt et al, 2006).

However, also asymmetries during group decision making can impair the decision quality and prevent the team to fully exploit its potential, in particular three type of asymmetries: negotiation focus, discussion bias and evaluation bias (Brodbeck et. al., 2007). The negotiation focus refers to "group members focus on exchanging and negotiating opinions and preferences so that the dominant or majority position can be identified and settled within the group (e.g., by voting)" (Brodbeck et. al., 2007: 463).

It is opposed to the information pooling, the social interaction comprising communication and integration of opinions, based on learning new information and re-evaluating alternatives.

The negotiation focus hampers the group potential because it brings to quick decisions, reducing the sharing of unshared information. It always reduces the members learning of new information but in the case of a hidden profile it leads also to a suboptimal decision.

Moreover, decisions can suffer for group-level discussion biases, in particular sampling bias and repetition bias. The sampling bias refers to the fact that shared information has greater probability to be mentioned in the discussion before than unshared information. Thus, a rapid conclusion of the discussion doesn't allow unshared information to contribute to the decision. Moreover, shared information is repeated during discussion (repetition bias), amplifying the effect of sampling bias. Besides, sampling bias and repetition bias lead group members to focus on information that are consistent with their initial positions.

In addition to the group-level biases there is an individual-level evaluation bias in the processing of information, which also favors shared and preference-consistent information. The basis of this bias is that shared information can be corroborated by more group members and that members see their own or preference-consistent information as more valid and important.

These three asymmetries in information processing (negotiation focus, group-level discussion biases and individual-level evaluation bias) interact each other accumulating their detrimental effects. Negotiation focus shortens the discussion increasing the sampling bias. Moreover, also the individual evaluation bias favors the sampling and repetition biases.

The dominance of shared and preference-consistent information is not always a problem, as it creates a "common ground" in the understanding of information. However, it hampers the members learning of unshared and preference-inconsistent information and in the hidden profile situations it reduces the decision making quality.

In conclusion, group decision making can outperform the individual one when information is distributed asymmetrically prior the discussion (hidden profile) and when the asymmetries in the processing of information, during group decision making, are not present (Brodbeck et. al., 2007).

These biases can be overcome through a strong "teamness", that is an effective team behavioral integration. On the opposite, when team does not cooperate, does not exchange information and present a strong centralization of decision making the cost of coordinate distributed knowledge appear to be higher than potential benefits (Boone and Hendriks, 2009).

As for the decentralization of decision making, it is proven to have effects also on corporate social performance of the firm (Wong at al., 2011), which refers to business organization’s configuration of principles, processes and policies of social responsibility and entails the taking into account of the interests and needs of multiple stakeholders (e.g., customers, employees).

Indeed, highly decentralized organizations involve a great number of individuals in decision making, which, as they exercise directly decision-making power, are motivated to collect information on the stakeholders they interact with. Moreover, as who accesses and who uses the information is the same person, the information is less likely to be altered, as it happens in

centralized organizations, when the information, moving up the organizational hierarchy, it may be subject to more distortion. Overall, decentralization of decision making affect positively corporate social performance (Wong at al., 2011).

Future research on behavioral integration

The participation to the decision making is a very important aspect of decision making but specific studies on the impact of participation and sharing of decision making are underrepresented. Some studies take into account the variable "centralization" or "decentralization" of decision making but the focus of these papers is on other variables. Instead, this issue of the participation is directly addressed in some studies on ownership (Long, 1980) or participation in decision making by the employees (Kerr, 2004), in which it is shown that the sharing of the ownership and of decision making power motivates the employees and improve decision making outcomes, since people who participate actively to the decision making process has a greater incentive to make better decisions. Specific studies on this issue, but tackled at top management or entrepreneurial teams level, would be valuable, especially with reference to entrepreneurial teams, where the issue of the sharing of ownership among team members plays a crucial role.

Cognitive perspective

The currency of the notion of cognition in the entrepreneurship literature is a sign of the application of ideas and concepts from cognitive science in the entrepreneurship research. At the origin of the growing interest in this subject there is a paper by Comegys (1976) dealing with "how the entrepreneur's emotional attachment to his brainchild can distort his business behavior" (Comegys, 1976: 1). Thereafter, the cognition in entrepreneurship literature has remained mostly anchored to the interest for individual entrepreneur, as the purpose of the studies of cognition in entrepreneurship was to shed light on the processes and cognitive resources that allow entrepreneurs to successfully evaluate opportunities and create venture and growth (Mitchell et. al., 2002). Many papers based upon the assumption that entrepreneurs and other individuals differ in the way they 'think', as they create opportunities and works where others do not and as they face situations characterized by uncertainty and stress. The aim was therefore to explain the cognitive properties needed to be an entrepreneur relying on the social cognition, managerial cognition or information processing theories. Significantly, Shepherd and his colleagues (2015) in their review on individual entrepreneurial decision making present a long list of papers about the emotional, motivational and

cognitive differences among entrepreneurs and between entrepreneurs and non-entrepreneurs (Shepherd et. al., 2015).

The three key features that characterize cognition research are mentalism, process orientation and cognitive dynamics across different levels of analysis (Grégoire et. al., 2011).

"Mentalism" refers to the "mental representations of the self, of others, and of events and contexts" (Grégoire at. al, 2011: 1446). The study of mentalism involves the analysis on perception and interpretation of the environment and on cognitive resources, such as knowledge and desires. Attitudes and motivations, treated as mental constructs, are also taken into consideration.

The "process orientation" studies the "interactions between environment, cognition and action" (Grégoire at. al, 2011: 1446). It is commonly connected with the information processing and the computational rules and routines that constrain human cognition.

"Cognition across levels of analysis" refers to the fact that "mental representations, ideas, and other mental resources can be 'shared' with others" (Grégoire at. al, 2011: 1448) and that different levels (individuals, groups, organizations, society) may influence one another. In the entrepreneurship literature there have been few efforts to study the articulation of entrepreneurship cognition across levels of analysis (Porac et al., 1989; Reger and Huff, 1993).

As the individual cognition is the most studied in entrepreneurial and management literature the attention to team-level cognition is quite uncommon.

However, the team-level cognition requires specific research, as it has some peculiar characteristics compared to the individual cognition.

The tension between the presence of multiple perspectives and the necessity of the development of a cohesive point of view among team members, needed at a team-level decision making, generates discussions and conflicts from which arises what has been called "shared cognition" (Ensely and Pearce, 2001; Shepherd and Krueger, 2002) or "collective cognition" (West, 2007).

"Shared cognition" is defined "as the extent to which strategic mental models held in the hearts and minds of the TMT members overlap or agree" (Enseley and Pearce, 2001: 146) and "it is the outcome of group processes that occur during the development of strategy" (Enseley and Pearce, 2001: 145)

The intentions-based model of Shepherd and Krueger emphasizes the importance of entrepreneurial team's perceptions of desirability and feasibility of the opportunities and link the individual- level cognition to the team setting (Shepherd and Krueger, 2002).

According to West the "shared cognition" concept remains anchored to individual cognition of the team members, being based on the variety of cognitive characteristics among managers who run new ventures (West, 2007).

To fully capture the collective dimension of cognition West introduces the notion of "collective cognition", which is something more and fundamentally different from the aggregation of individual cognitions. Indeed, "while the founders and each top manager will have individual perspectives and cognitions about their new venture, it is a collective perspective or a collective knowledge structure at the team level that guides the direction of the venture" (West, 2007: 78). The collective cognition is a team-level perspective, i.e. a team cognitive structure of cause–effect knowledge that manifests itself in decisions and outcomes.

Collective cognition has its own properties and structure; in particular it comprises two structural dimensions: differentiation and integration. Differentiation refers to "the extent to which each strategic construct is construed as different from every other strategic construct" (West, 2007: 85). Integration refers to "the degree to which top managers think in a similar fashion about a set of strategy constructs" also in relation to the assessment of the importance of this constructs (West, 2007: 85).

Firm performance is positively affected by both differentiation and integration when levels of each variables are close to the midrange. Indeed, data show that there is an inverted U relationship between the two dimensions and that much differentiation (endless identification of new and diverse alternatives) and much integration (too many similarities in members' views) hamper firm performance (West, 2007).

De Mol and his colleagues stress the relevance of the distribution of knowledge structures, defining the entrepreneurial team cognition as "an emergent state that refers to the manner in which knowledge is mentally organized, represented and distributed within the team" (De Mol et al., 2015: 243).

Moreover, they point out that entrepreneurial team cognition is distinct from team processes but it is also embedded in them: indeed entrepreneurial team cognition represents the product and at the same time a new input to team processes, such as information processing and decision making (De Mol et al., 2015).

The cognitive perspective is a new and emerging topic connected to the study on decision making (West, 2007; Grégoire et. al, 2011; Shepherd et.al, 2015).

Several papers included in this review, in particular more recent ones, hold a cognitive perspective (e.g. Brodbeck et. al., 2007; Souitaris and Maestro, 2010; Wong et. al., 2011)

Indeed, the cognitive perspective can embrace the study of several variables related to decision making, from the integration of different perspective stemming from heterogeneity among team member to the team mechanisms like the information processing.

Future research on cognitive perspective

We believe that the cognitive perspective is the most promising stream of research on decision making.

Further conceptual clarification on the concept of entrepreneurial cognition and empirical research on relationships between entrepreneurial team cognition and its antecedent and outcomes are still needed. Moreover, also the connection between entrepreneurial cognition and interpersonal processes like confidence-building and motivation would require in depth studies (De Mol et al., 2015).

We believe that the cognitive perspective is new and disruptive because it allows you to look more closely and to have a deeper understanding of human behavior in entrepreneurial and managerial contexts.

An example of its explanatory power is provided by Nadkarni and Barr (2008). They observe that the research on strategy suffers from the rigid distinction between two different perspectives: the industry structure view and the managerial cognition view. The first highlights the influence of industry structure on strategic actions, while the second one points out that the management cognition induces strategic actions. The authors present a model that aims to integrate these two perspectives: the industry setting influences managerial cognition, which, in turn, influences strategic actions.

Taking into account the relationships and influences between industry and cognition views helps to deeply understand relevant issues, such as explaining the differences in sense making between managers of diverse industries or clarifying how this sense making affects the decision making speed.

The integration of a cognitive perspective, which draws on the results of psychological and sociological literature and the typical issues of management and entrepreneurship literature, is certainly a harbinger of intriguing developments in the literature.

Instead, a limitation of cognitive perspective is the poor attention paid to the collective dimension of cognition. This topic opens a wide research space for the future. For example, the study of the relationship between the environment, team processes (such as decision making process) and collective cognition is an issue which is still unexplored.

Besides, we agree with West (2007) when he points out that also the relations between individual and collective cognition need further investigations and analyses.

For example: what team dynamics favor or do not favor the development of a shared cognition?

Several issues approached from the point of view of the individual cognition could be addressed from the point of view of the collective cognition, especially in the study of those cases, such as the

entrepreneurial teams, where the team (with its cognition) is the decision maker and the agent. For example, many studies are focused on cognitive differences between entrepreneurs; like-wise we could study and compare different types of teams, i.e. teams with certain demographic or cognitive characteristics, or with different motivations or aspirations, can be compared. Then we can study in which way they differ in decision making, for example in relation to situations of risk or in the evaluation of the entrepreneurial opportunities.

Discussion and future areas of research

The clearest element that emerges from this literature review is a failure to recognize the peculiarity of entrepreneurial teams.

Some constructs developed to study the top management teams need some refinements in order to be applied in the analysis of entrepreneurial teams. Management teams and entrepreneurial teams are likely to substantially differ on variables such as behavioral integration, depth of conflict and shared ownership. Moreover, the unique characteristics of entrepreneurial teams are likely to affect the weight of social and emotional elements in relation to decision making. These are themes still to be adequately analyzed.

The issue of the heuristics and biases (Kahneman, Slovic and Tversky, 1982; Gilovich, Griffin and Kahneman, 2002) is another important aspect of the decision making that has been surprisingly overlooked in the entrepreneurial decision making literature, as also Shepherd and his colleagues point out, in relation to the individual-level of decision making (Shepherd et. al., 2015).

Our review points out that in particular at the team-level the issue of heuristics and biases has not been sufficiently researched in entrepreneurial and managerial contexts.

As shown by some studies, the group can influence individual decisions. For example, in the experiment conducted by Reimer and Katsikopoulos (2004) on the use of recognition heuristic in group decision-making is shown that group decisions differ in most cases from individual decisions (Reimer and Katsikopoulos, 2004). In addition, there are "genuinely social heuristics designed exclusively for social information" (Gigerenzer and Gaissmaier, 2011: 472), such as the social-circle heuristic (Pachur et al., 2005), tit-for-tat (Messick and Liebrand, 1995), imitation heuristics (Posada and López-Paredes, 2008; Friedman et al., 2015) and "averaging the advice from different people... to tap into the wisdom of crowds" (Hertwig and Herzog, 2009: 687).

Papers on heuristics and biases usually concentrate on general cognitive processes and are not focused on entrepreneurial or managerial decisions and contexts.

An article published on the journal "Psychological review" tries to answer to this question: "Which is more likely to make a biased judgment, individuals or groups?" (Kerr et.al., 1996: 713) The answer is that it depends on a lot of factors: group size (the magnitude of the bias increases with the increase of the group size), initial individual judgment (as individual bias magnitude and direction vary the group ones vary too), type of bias (the result depends on how the bias was defined) and, most importantly, the group-judgment process (in which factors such as the harmony of the group, the importance given to the task and the general level of uncertainty of decision-makers are involved). The paper by Kerr and his colleagues presents the relevant literature on this issue, taken primarily from the psychological and sociological field, but it does not present any study concerning management or entrepreneurial fields.

In the third place, we observe that whereas in entrepreneurship and decision making literature the centrality of the team struggles to emerge, it has a central role in studies concerning the new product development.

This diverse perspective between the new product development and decision making literature is also evident in the terminology: most of the works on new product development uses the term "project team", while in the decision making literature the word "organization" is spread (for a review of the new product development literature see Brown and Eisenhardt, 1995 or Krishnan and Ulrich, 2001).

Researches on new product development can offer some cues for the study of decision making in entrepreneurial teams as they have several points in common: 1) the new product development is a process that involves a series of decisions; 2) the decision to develop a product is usually a strategic decision for the company; 3) technology-based firms are often founded by entrepreneurial teams, because the type of environment faced by these firms requires from the beginning a pool of heterogeneous skills. Similarly, a successful new product development requires the cross-functional integration of members within project teams.

Looking at the literature on new product development helps to identify topics in the research on entrepreneurial teams that have not been fully developed yet.

In addition to the future research directions on topics already present in the literature which we examined in the previous paragraphs, we present some suggestions for further future areas of research, aimed to fill the gaps in the literature identified through this review.

Ownership

The ownership is one of the main characteristics that distinguish entrepreneurial teams from other types of teams. In presence of a shared ownership, it is reasonable to think that psychological

factors such as the trust towards the other members, might have a significant weight. A psychological research on accountability, for example, shows that this heavily affects the decision making (Lerner and Tetlock, 1999).

Studies focusing on entrepreneurial teams and addressing the consequences of shared ownership would throw new light on the specific mechanisms that determine the decision making process within these teams.

For example, on one hand previous research shows that a more inclusive decision making is beneficial to decision quality but on the other hand, in the case of entrepreneurial teams shared ownership is potentially a trigger for strong personal and emotional conflicts.

Empirical research on this topic would be particularly interesting for practitioners. In particular facing the current crisis firms are in need to establish organizational settings which are possibly new and different compared to the classic sole entrepreneur's model. As the ability to make good decisions is an indispensable asset for the success of a firm, understanding what are the implications of a shared ownership can be of fundamental importance well beyond the academic research.

Multi-level structure of decision making

The decision making process involves different levels of analysis with strong mutual ties. The individual level of decision making influences the team-level, which in turn is nested in the firm level and inserted in the industry level.

Often studies on decision making and cognition look only at one level that can be the individual or the team level. The correlations between these levels still remain largely uninvestigated. For example, which effects have team mechanisms on individual cognition and decision making? In which way the firm level affects the team level?

Team-level heuristics and biases

The focus on the team-level study of heuristics and biases has to take into account the collective dimension of decision making. For example, which biases are amplified by the collective dimension of the decisions? Or: what environmental factors or characteristics of the team affect the emergence of biases and the use of certain heuristics?

As regards the implications for practice of research on this topic, empirical studies on certain types of decision would be fruitful, such as the decision on whether or not create a new product line rather than the decision to form a strategic alliance. Furthermore, studies focused on a specific industry would be desirable. Indeed, as studies show, there is not a decision making model recognized as universally better than the others but the way the decision making is realized depends on the setting

in which the company operates, for example if it operates in a stable or an unstable environment. Sectorial studies would thus be more realistic and close to reality and could be of great usefulness for practitioners. A specific analysis should be carried out about technology-based firms which by their own nature are often founded by entrepreneurial teams. Homogeneity among team members often occurs in this type of firms as entrepreneurial teams are mainly composed by members having the same technological and scientific background. Empirical studies could investigate the (casual) relationship between this peculiar homogeneity and the emergence of specific cognitive or decision making bias.

Emotional and interpersonal aspects

Another research direction we suggest is the study of the effects on decision making process of emotional and interpersonal aspects.

Eisenhardt and Schoonhoven observe that past joint work experience among the founding team is one factor that leads to speed in decision making and reduces the 'liability of newness' (Stinchcombe, 1965) of entrepreneurial firms. Indeed, the team members have learned to make decisions quickly using established routines, thus they can concentrate on issues concerning the firm instead of focusing on group- processes. Moreover they are more cohesive and have higher trust than teams without such experience (Eisenhardt and Schoonhoven, 1990).

As entrepreneurial teams are composed by members that voluntary decide to start a firm together, we expect that the effects of emotional and interpersonal aspects would be greater in these teams than in other types of team

Power

The dimension of power would deserve more attention in the research on entrepreneurial teams.

In particular the study of different types of power structure within the entrepreneurial team and their consequences on types of conflict and management of conflict surely would lead to intriguing findings.

The reason why in entrepreneurial teams some configurations are more common than others and the dissimilarities in respect with other types of teams is another suggested direction for research.

Moreover, the relationships between power structure configurations, conflict, other interpersonal variables, such as trust, and proximal and distal outcomes could be more deeply investigated.

We believe that on this topic the cognitive perspective could give an important contribution.

Communication

A subject of great interest addressed by many papers on new product development which would provide useful ideas for the issue of decision making in entrepreneurial teams is communication.

As for external communication, Allen (1971) observes the presence of the so-called "gatekeepers", individuals who are strongly connected both internally with their colleagues and externally with sources of information. They have a key role in collecting and bringing information into the firm.

An article by Dougherty (1992) which concerns the internal communication emphasizes the idea that in order to have a good internal communication it is important in particular the way in which project team members overcome cross-functional barriers. He suggests to participate in concrete tasks together and to break the established patterns, creating new routines and maintaining a fluid rather than rigid division of labor (Dougherty, 1992).

The decision making is closely linked to the gathering of information (from outside the firm) and to the processing of information. Thus, the analysis of communication (internal and external) appears to be fruitful in the study of decision making within entrepreneurial teams and of great interest also for practitioners.

Conclusion

In this paper we reviewed the existing literature on decision making within entrepreneurial teams. We found out that this is a topic that has not yet received enough attention within the management and entrepreneurship literature. Furthermore, the research on decision making appears disconnected from the research on entrepreneurial teams and the team level of analysis still receives less attention than the individual level.

The existing literature concentrates particularly on the conflict within teams and on heterogeneity among team members. The more recent papers hold a cognitive perspective.

This review also highlighted the existence of relevant gaps in the literature and the fact that the decision making in entrepreneurial teams is a research topic that opens up to many new areas for future research. In particular, we proposed as possible areas for future research the analysis of the impact of shared ownership, team-level heuristics and biases and communication on the decision making process. Moreover, the study on multi-level structure of decision making and on the relationships between decision making and power structures, as well as on the connections between decision making and emotional and interpersonal aspects are other suggested future areas of research.

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CHAPTER 2

HOW LEADERS MAKE STRATEGIC DECISIONS IN MICRO AND SMALL FIRMS. A QUALITATIVE ANALYSIS

HOW LEADERS MAKE STRATEGIC DECISIONS IN MICRO AND SMALL FIRMS. A QUALITATIVE ANALYSIS

Abstract

This research aims at investigating how the participation in the decision making among leaders works in micro and small enterprises and how and why it changes with the growth of the firm in terms of increase in the organizational size. We analyze also the leadership structure as a contextual variable. We propose a distinction between the leadership structure and the participation in decision making among leaders and we shed some light on their interplay. The study is carried out on eight micro and small enterprises of the ICT industry: four of them are micro firms (less than ten employees) and four are small firms (from ten to fifty employees). We perform a qualitative research based on semi-structure interviews comprising also retrospective reports. We found that micro enterprises adopt an autocratic or a group decision making. Instead, larger small enterprises adopt consultative decision making processes. The main factors triggering the changes towards the adoption of consultative decision making processes in larger small firms are the lower importance of the Motivation-time Attribute in larger small companies compared with micro firms and an enhanced level of conflict accompanied by more difficulties in reaching the consensus. Speaking about the interplay between the leadership structure and the participation in decision making among leaders, we argue that the increase in the firm size may affect one of the two levels without affecting the other, showing that the two levels are distinct and independent. A change in the leadership structure provokes a change in the participation in decision making among leaders, while the opposite does not occur. This supports our idea that the leadership structure is a contextual variable where strategic decision making takes place.

Introduction

This research aims at investigating how and why the participation in the decision making among leaders differ in micro and small enterprises. In particular the study wants to understand:

- How the participation in decision making among leaders works in micro firms and how it works in small firms;
- what are the differences between micro and small firms in the participation of leaders in strategic decision making;

- how and why the participation in strategic decision making changes with the growth of the firm in terms of increase in the number of employees.

The main focus of this study is on the participation in strategic decision making processes among leaders. We analyze also the leadership structure as a contextual variable. Moreover, the firm size is regarded as a contextual variable which has also a contingency role.

We argue that the leadership structure (individual leadership or co-leadership) has been often confused with the participation in strategic decision making among leaders. Instead, we suggest that the leadership structure is the context in which strategic decision making takes place. Moreover, we point out that this distinction is crucial to understand how firm size affects the participation in strategic decision making among leaders and to understand the interplay between the two levels of leadership structure and participation in strategic decision making. It also allows us to investigate in a more comprehensive and nuanced way the complex mechanisms and dynamics which lead to the emergence of a different type of participation in decision making among leaders with the growth of the firm.

The research is carried out on eight micro and small enterprises of the ICT industry: four of them are micro firms (less than ten employees) and four are small firms (from ten to fifty employees). We use semi-structure interviews and we rely also on retrospective reports to understand how and why the degree of participation of leaders in strategic decision making changes with the increase of the firm size. Then, we compare the reports contained in the interviews in micro and small firms in order to understand what has triggered this change in larger firms and how participation to decision making process among leaders tends to evolve when the threshold of size and complexity of ten employees is overcome.

By leadership structure we mean individual, shared or distributed leadership. Concerning the degree of participation to decision making among leaders we refer to the Vroom - Yetton model and we distinguish between autocratic, consultative or group decision making processes (Vroom and Yetton, 1973). Following the terminology used by Vroom and Yetton we will use the term "decision making process" to refer to these three types of increasing participation.

Our paper holds a contingency perspective taking as a contingency factor the firm size. The firm size is typically regarded as a contingency factor in the literature, also in studies on the leadership structures (Daily and Dalton, 1993; Dalton et al., 1998; Palmon and Wald, 2002; Hambrick and Cannella, 2004). Instead, surprisingly, it has been disregarded in the literature on participation on decision making, which is focused mainly on other factors, in particular the individual differences (for a review see Locke and Schweiger, 1979), the company's culture (Miller, 1988), the job type (Miller and Monge, 1986) and the group size (Gowen, 1991). An exception is represented by the

paper by Connor on Oregon nursing homes, which analyzes the effects of facility size on the degree of decision making participation (Connor, 1992). Our is the first paper that analyses how the increase in firm size affects the participation in decision making among leaders. We argue that firm size has a great explanatory power in highlighting how decision making processes change during the firm growth and how this change affects the performance. Therefore we believe that deepening our knowledge on the contingency role of firm size enriches the contingency perspective on participation in decision making.

Our research focuses on micro and small enterprises. Most of the literature on participation to decision making deals with how large enterprises should change their decision making processes in order to retrieve efficiency and good performance. The solution found by several scholars is to make the decision making processes more participative and collaborative and pass through processes of delegation, consultation and decentralization of the decision making (Downs, 1967; Wilensky, 1967; Pugh et al., 1969; Blau, 1970: Pondy, 1970; Blau and Schoenherr, 1971; Moch and Morse, 1977; Scott, 1987; Huber, Miller, & Glick, 1990; Daft, 1989). We consider the opposite process: how does participation in decision making at the top of the organization in small enterprises evolve with the growth of the firm? We argue that starting from the opposite side of the continuum of the firm size, with respect to the existing literature, allow us to highlight the process of changes in decision making processes. Moreover, this new perspective helps us also to enrich our knowledge on the phases of the growth of the firms. As a matter of fact, the existing literature on the growth of the firms does not take into account the decision making process as one of the variables that may undergo relevant changes. The focus on the top level decision making processes, that is, on the degree of participation to decision making among leaders, is functional to allow us to highlight the distinctions between the two levels of leadership structure and decision making processes. After having conceptually set this distinction we tested it empirically.

Theoretical Background

One of our theoretical references is the literature on the participation in the decision making processes. In particular, we drawn on the models of Vroom and Yetton (Vroom and Yetton, 1973) and Arendt and his colleagues (Arendt et al., 2005) for the definition and demarcation of the different degrees of participation in decision making. Our paper analyzes in particular the strategic decision making at the top of the company. As we analyse also the leadership structure as a contextual variable, we draw also on the literature on leadership and co-leadership and in particular on shared and distributed leadership: referring to plural forms of leadership allows us to analyze the

structure of leadership with a vision not limited to the possibility of individual leadership. Shared and distributed leadership have been used often on interchangeable way in the literature. That's why we illustrate the differences between the two constructs. The literature on the growth of the firm is also of interest to our work. Our paper analyzes the organizational size and does not adopt an approach to firm growth phases as many papers belonging to this literature do. However, the reference to this literature is useful because it helps us to highlight the dynamic and procedural aspect of changes which take place in firms both at the level of leadership structures and decision making processes.

Below we analyze each of these streams of research.

Research on the degree of the participation to decision making processes

The issue of the participation to the decision making processes has been studied mainly in relation to the involvement of subordinates in decisions. Several studies have highlighted the numerous positive consequences of subordinate participation to decision making. In particular participation can foster the information and knowledge sharing and integration (Stasser & Titus, 1987; Edmondson, 1999; Latham et al. 1994), facilitate cooperative communication (Campion et al. 1993) and encourage the commitment and social support to the implementation of decisions (Mumford & Gustafson, 1988; . Latham et al., 1994). A turning point in the research of this topic is represented by the contingency model developed by Vroom and Yetton (1973). The element of novelty of the Vroom-Yetton is that, instead of trying to support the idea that a participative process is always better than a centralized process, rather than the other way round, the preference for one decision making process is linked to the contingency of the specific decision to be made and its attributes. The model identifies five decision making processes which range in accordance to the degree of participation of subordinates from autocratic (A1 a AII) to consultative (CI and CII) to group decision making processes (GI). In the autocratic decision making process the leader makes the decision alone either using the information available to him (AI) or obtaining any necessary information from subordinates without involving them in the evaluation of alternative solutions (AII). In the consultative decision making process the leader shares the problem with the relevant subordinates individually (CI) or in a group meeting (CII). Then he makes the decision, which may or may not reflect the subordinates' influence. In the group decision making process the leader shares the problem with subordinates as a group and together they attempt to reach agreement (consensus) on a solution. The leader acts as a chairman and he does not attempt to push its own solution but accepts any solution which has the support of the entire group (GII). The validity of the Vroom-Yetton has been demonstrated in several studies (Vroom and Jago, 1978; Margerison and

Glube, 1979; Field, 1982; Tjosvold, Wedley and Field, 1986; Paul and Ebadi, 1989; Field and House, 1990; Thomas, 1990; Brown and Finstuen, 1993).

While the Vroom-Yetton model focuses on the dichotomy leader/subordinates (as a matter of fact the model addresses leaders suggesting them the appropriate level of participation of the subordinates), we focus on the participation in decision making among leaders. Therefore in our research an autocratic decision is made by the leader alone, in the consultative decision making process the leader consults the other leaders and in the group decision making the decision is made together by the leaders. The involvement in the decision of subordinates is not taken into account in our research. Focusing on participation among leaders represents a new perspective in the research on the participation in decision making processes. Moreover, while the Vroom-Yetton model takes the attributes of the decision as contingency factors we consider the firm size as a contingency factor. As a matter of fact our aim is to examine if the establishment of different decision making processes among leaders vary on the basis of the firm size. This aspect has been overlooked by the literature. A tentative approach to address this issue has been made by Arendt and her colleagues (Arendt et al., 2005). They introduce the CEO-Adviser model, which is similar to consultative decision making process presented in the Vroom-Yetton model, contrasting it with the CEO model (corresponding to the autocratic decision making process in the Vroom-Yetton model) and the TMT model (corresponding to the group decision style in the Vroom-Yetton model). They suggest that "not all models are equally applicable to all firms" (Arendt et al., 2005, p. 695). In particular, "the CEO model... might most appropriately be adopted by researchers when the firms to be studied are relatively small in terms of either size or product/market scope, wherein even strategic decisions might be made based on one person's perspective. The TMT model, on the other hand, might most appropriately be adopted by researchers when the firms to be studied are (a) relatively large in terms of size and product/market scope, wherein structural complexity compels decision making that depends on the diverse perspectives of multiple organizational members... The CEO-Adviser model might most appropriately be adopted by researchers when the firms to be studied are not so small that their strategic direction and operations can be established solely by an owner-manager and yet not so large that those reporting to the CEO see themselves as leading their own independent companies within the firm" (Arendt et al., 2005, p. 695). The authors claim that an empirical test of the CEO-Adviser model would be valuable. We reply to this suggestion with a descriptive empirical study in which we analyze how the CEO-Adviser model and the other models, the CEO and the TMT ones, are configured in firms in relation to a different firm size and how they evolve with the growth of the company.

Research on leadership structures

The leadership has been traditionally described as an individual activity, carried out by a "hero" which owns some special characteristics. Therefore the individual leadership has been the most studied type of leadership structure. We define "individual leadership" as the setting in which there is a sole leader who assumes the leading role in every situation.

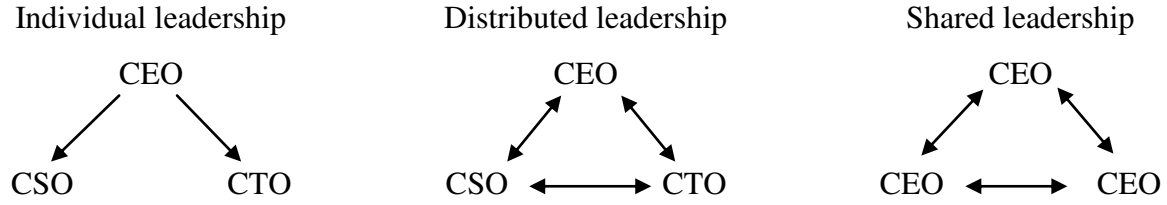
Recently scholars are getting more and more interested in "plural" co-leadership forms (Gronn, 2000; Gronn, 2002; Ensley et al., 2003; Day et al., 2004; Ensley et al., 2006; Carson et al, 2007 Bergman et al., 2012; Patton and Higgs, 2013). This growing interest accounts for the transformations occurred within companies: changed conditions, in particular the increased complexity and fastness of markets have led organizations to the need of sharing and dividing the leadership activity (Gronn, 2003).

The most studied plural types of leadership are referred as "shared leadership" and "distributed leadership". These two terms are often used in an interchangeable way in the literature but actually there are huge conceptual differences which appear more clear if we look at the historical development of these two constructs (Fitzsimons et al., 2011). The concept of "shared leadership" has evolved in the team-based literature from the concepts of self-leadership and self-management, which constitute the preconditions of the sharing of leadership roles (Avolio et al. 1996; Manz and Sims, 1989, 1991). Shared leadership is defined by Ensley and his colleagues (2006) as a "team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual.... shared leadership draws from the knowledge of a collective ....[and] flows through a collaborative process" (Ensley et al., 2006, p. 220). As Pittino and his colleagues pointed out by "in these arrangements each member has the same structural power in the company management (for example, all the members hold the formal CEO title) and at the same time, company leadership is carried out by the team as a whole, with various degrees and forms of mutual influence among the members" (Pittino et al., 2016).

Instead, the construct of distributed leadership has been developed mainly in the literature on education. The idea was to "move leadership away from the top of the organization to create leadership practices throughout the organization" (Fitzsimons et al., 2011, p.314; Spillane et al. 2000, 2001, 2003, 2004, 2006; Gronn, 2002). According to Gronn the distributed leadership implies "divisions of leadership labor", based on "preferred arrangement or configuration of tasks" which originates from the different expertise and interests of the co-leaders and brings to "new forms of role interdependence and coordination" which leads to "distributed patterns of leadership" (Gronn, 2002, p. 425-428). In this form of leadership each co-leader specializes in a specific task and role, on the basis of his competences.

In this research we used the following definition of shared and distributed leadership structure, which we think describes well the distinction between the two constructs. In the shared leadership setting an authentic "leader" does not exist but the leading role is assumed by different members of the team depending on the different situations and problems. Instead, in presence of a distributed leadership there is a different leader for various types of decision (e.g. the leader for scientific and technological decisions is different from the leader for the financial and administrative issues).

Figure 1. Leadership structures



Distinguishing the concepts of leadership structure and degree of participation in decision making among leaders

We clarified what we mean with decision making processes among leaders differing in the degree of participation. In order to make clear the distinction with leader structure it is helpful to clarify what we mean with "leadership". Scholars have long considered what is "leadership" and nevertheless there is not a single and univocal definition of this construct but "there are almost as many definitions of leadership as there are persons who have attempted to define the concept." (Stogdill, 1974, p. 259). Leadership has been described in relation with the traits of the leader, as a specialized role, as an influence process resulting in a convinced commitment by followers, as distinct from management in underlying values and behavioral patterns (Yukl, 1981; Yukl, 1989). Here we consider the leadership as the "activity" carried out by the leader/manager. This activity can be carried out by a single individual or by multiple leaders, in the different and settings of shared or distributed leadership already considered above. We embrace the Mingtzberg description of managerial roles according to which the motivation of subordinations, peculiar of leadership, is one of the roles of the manager, although the most important and which pervades the other roles (Mintzberg, 1973). According to Mintzberg (1973) the activities of a manager are numerous and diversified. in addition to driving the subordinates, spurring them and set up favorable conditions for doing the job, he must establish and preserve a network of relationships with entities outside the organization which can provide information useful to the firm and he must represent the company at meetings and events. He must then perform a monitoring activity on performance indicators,

organizational climate and market conditions. The analyzed information must then be transmitted to selected subordinates and to stakeholders outside the organization. Moreover he must seek and exploit opportunities to bring about changes that improve the existing situation and at the same time handle disturbances or crises, allocating resources and in doing so coordinating the actions of subordinates in a way consistent with the company's strategy (Mintzberg, 1973). According to Yukl, beyond the different classifications that have been made of managerial activities, they can be grouped into four general processes that partially overlap: influencing people, developing and maintaining relationships, obtaining and providing information, making decisions (Yukl, 1981)

What we want to bring out is that, although decision making is a priority activity of leaders, the leadership activity is more varied and the overlap between the two of them is only partial. So even when we talk about participation in leadership and decision making we talk about two different level that do not coincide in meaning. For example, there may be the presence of a single leader, who takes the guiding role in any situation, while in making decisions he consults or involves in the decision other managers in charge with more specific functions in which the firm is divided (e.g. technological functions). In this case, therefore, the leadership is individual while the decision making processes are consultative or group ones. Likewise, there may be a distributed division of the leadership activity, while the strategic decisions are made in an autocratic way by the CEO.

Above all in the literature on shared and distributed leadership there is confusion between the fact that in this literature leadership is seen as a social process of mutual influence among individuals. The relational-entity (Dachler and Hosking 1995, Bolden and Gosling 2006, Scott DeRue and Ashford 2010), the relational-structural (Borgatti and Foster 2003, Freeman 2004), the relational-processual (Spillane, 2006; Gronn, 2002) and the relational-systemic (Fitzsimons et al., 2011) approaches applied in the study of shared and distributed leadership all describe in different ways how leadership is built through interpersonal relationships. Since decision making is also a social process of teams which produces a mutual influence among participants, the two levels are often overlapped or confused. We argue that although there is this common feature between the two constructs, they remain conceptually distinct. Our research aims at verifying empirically whether this distinction is useful to better understand what happens in companies, considering also the changes in the participation in strategic decision making among leaders due to the growth of firms.

Research on firm growth

An extensive literature is dedicated to the study of firm growth patterns. Usually these studies describe the evolution of the firm as a passage through a series of phases inspired by an "organismic" and "biological" view of a firm (Levie and Hay, 1998). These phases are sometimes referred to as "life cycle", beginning with the birth of the company, passing through a series of

transitions and culminating with a phase of maturity and in some cases with the company's death. The early growth models of the company were "path-dependent determinist models" (Phelps, 2007, p.6) in which the company was seen going through a pre-determined and predictable series in order to grow and achieve maturity. The most famous models adopting this approach are the Greiner model (1972) and the Churchill and Lewis model (1983). In Greiner's model, companies go through five phases of evolution followed by a revolutionary period in which the dominant management style of the evolutionary period is challenged. If the firm succeeds in overcoming the crisis during the revolutionary periods it will pass to the next phase of evolution (Greiner, 1972). The Churchill and Lewis model presents a series of decisions to be made in order to make the company grow. Each phase is characterized by five management factors: managerial style, organizational structure, extent of formal systems, major strategic goals and owner's involvement in the business (Churchill and Lewis, 1983). Some scholars have criticized the fixed linear sequence of growth stages presented in these models and have proposed a different perspective in which the transition between phases is viewed in terms of dominant problems that management need to address (Kazanjian 1988; Smith et al. 1985). This perspective has a more cognitive approach and look at managers as able to struggle to achieve the firm's goals.

Models on the growth of the firm generally focus on modifying the management/organizational modalities and structure, on the changes of the role of the entrepreneur, on the passing from control to delegation to coordination processes, on the availability of human and financial resources, on the change in strategic orientation and in operative activities (Lippit and Schmidt, 1967; Filley and House, 1969; Kroger, 1974; Adizes, 1979; Kimberly, 1979; Galbraith, 1982; Churchill and Lewis, 1983; Quinn and Cameron, 1983; Scott and Bruce, 1987; Beverland and Lockshin, 2001). Instead, the issue of changes in participation to decision making processes has been overlooked by this literature. An exception is represented by the study by Kazanjian and Drazin (1990) which analyzes the decision making centralization defined as "the extent to which decisions on budgets, planning, and new product developments are conducted at higher versus lower levels in the organization" (Kazanjian and Drazin, 1990, p. 141). They found that decision making becomes increasingly decentralized as size increases.

Our paper enriches this literature because it suggests that one of the necessary adjustments that the company must adopt in the course of its growth concerns the degree of participation in decisional processes among the leaders. This is an issue that has not yet been addressed in the literature on the firm growth .

Method

We based our research on the approach of building theories from multiple case studies developed by Eisenhardt (Eisenhardt, 1989b). We chose that methodology for several reasons.

First of all our purpose was to investigate the dynamic and processual evolution of leadership structure and decision making processes, neither fixed nor discrete states.

Since we aimed at bringing out these "qualitative" and hardly measurable and quantifiable aspects, the choice fell on a qualitative approach. It was through the free narration of the interviewees that we have been able to understand and describe the changes that take place in companies as they grow. We managed to obtain this information by contacting and talking directly to the persons involved. A second aspect concerns the fact that our research is based on conceptual distinctions that would have been difficult to understand for the interviewees, even because this research aims at making a distinction between leadership structure and decision making processes among the leaders that have never been clearly adopted even at the academic level. The interpretation of the concepts would therefore have probably been subject to confusion.

The use of semi-structured interviews allowed us, through the continuous interaction with the interviewees, to understand what the interviewees meant for words like "leadership". They stories were collected but the work of interpretation of the meaning and the subsequent framing of those stories within the conceptual framework underlying this research was operated by the researchers.

The third reason, evidently linked to the previous one, is that this research is not based on solid pre-constituted theories but aims at the contrary, precisely at creating a theory in a terrain almost unexplored by literature. In this context, the use of semi-structured interviews, free speeches and the theory building method developed by Eisenhardt helped us to bring out those themes on which we have subsequently constructed the propositions of our research.

Following other studies (Mabert et al., 1992; Von Krogh et al., 2003; Brockman et al., 2010; Karjalainen and Snelders, 2010) we selected a limited number of cases, we carried out semi-structured interviews and we looked at documents and other materials (websites of the companies, written documents on companies' performance). We also used a secondary source, the database AIDA, in order to check the truthfulness of what stated by the interviewees about the number of employees, the firm's foundation year, the firm's turnover and the composition of the board of shareholders. We relied on several data sources because it helps to obtain more accurate information and to formulate more robust constructs (Jick, 1979). Then we structured the information collected "into readable narrative descriptions with major themes, categories, and illustrative case examples extracted inductively through content analysis" (Patton,

2005). Carrying out the interviews we use also retrospective reports in order to understand how the participation to strategic decision making among leaders change with the increase of firm size in small firms. Then, we compare micro and small firms in order to find differences and similarities between the two groups, to find out if the participation to strategic decision making among leaders is different in the two groups and what are the dynamics and reasons which can explain these differences. Retrospective reports have been used extensively in the management and entrepreneurship literature. In particular, they have been used in studies on decision making processes (e.g. Mintzberg et al., 1976; Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989) , firm strategy (e.g. Nutt, 1987; Boeker, 1989; Zajac and Shortell, 1989; Feeser and Willard, 1990) and organizational change (Huber and Glick, 1983; Smith and Grimm, 1987; Eisenhardt and Schoonhoven, 1990; Huber and Glick , 1993). In a literature review on entrepreneurship research, out of 419 empirical studies 39 use retrospective reports to reconstruct past events or situations (Chandler and Lyon, 2001). Despite its popularity, the use of retrospective reports has been criticized for two main reasons. Firstly, interviews can recall inaccurately past facts and situations for faulty memory or inappropriate rationalizations (Huber and Power, 1985; Jackson, 1987; Golden, 1992). Secondly, interviews tend to present a socially desirable report (Huber and Power, 1985; Golden, 1992). We solve these issues relying on multiple-respondents, in this way enhancing the reliability of our study (Huber and Power, 1985; Chandler and Lyon, 2001).

Case selection

In our research we included eight firms, all operating in the ICT industry. Despite some differences in the products offered, all the companies involved in the study develop B2B tailor-made software and this allow us to compare them, as their business model present similarities in the combination product/market.

Out of these eight firms, four are micro-enterprises (less than ten employees) and four are small enterprises (between ten and fifty employees). In differentiating between micro and small enterprises we based on the definition of micro and small enterprise provided by the EU. We chose ten employees size threshold since it is conventionally used in the literature to hint at different levels of complexity of the firm (Storey and Wynarczyk, 1996; Perren, 1999; Thakur, 1999; Bernroider, 2002; Vernon et al., 2003; McKeiver and Gadenne, 2005; Mir and Feitelson, 2007; Mir, 2008; Martín-Tapia et al., 2010). The analyzed firms have been selected to represent typical cases of micro and small enterprises (Patton, 2005).

Company profiles

Table 1. Organizational size of the firms and interviewees

Company	Organizational size	Micro/small	Interviewees
Company A	3 leaders, 0 employees	Micro	3 leaders
Company B	5 leaders, 4 employees	Micro	1 leader and 1 employee
Company C	1 leader, 2 employees	Micro	CEO
Company D	1 leader, 6 coworkers	Micro	1 leader and 1 coworker
Company E	7 leaders, 18 employees	Small	2 leaders
Company F	2 leaders, 3 employees, 16 coworkers	Small	2 leaders and 2 coworkers
Company G	7 leaders, 24 employees	Small	CEO
Company H	2 leaders, 42 employees	Small	CEO and 1 employee

Table 1 summarizes the organizational size of the companies involved in the research and the number of interviewees in each company.

Company A is an innovative start-up. It is composed of three co-founders who are equal partners and co-CEOs. The firm has no employees but the business partners and it collaborates only occasionally with two or three freelancers. Despite being so small the firm seems to be a successful case, with nine ongoing or done projects which range from € 10,000 and € 100,000.

Company B has been founded by two partners, who later became four, then five. Moreover over the years four financial shareholders have joined the firm. The firms has four employees. The turnover is between € 600.000 and € 700.000. Company C has been founded by four equal partners: three of them are only financial partners, while one is operating and is the sole manager of the firm. The firm has two employees and a turnover of around € 200,000.

In company D the sole founder is the owner and the only shareholder. The firm collaborates with six professionals. One of them used to collaborate with the firm's owner also before the foundation of the company and the control of the firm is practically shared by the two. The firm's turnover is around € 30,000.

Coming to the larger firms, company E has been established by four co-founders, one of them is the CEO and the majority shareholder. Currently the directive board is composed by seven partners. The firm has eighteen employees and has a turnover of around € 2,500,000.

Company F has been established by two co-founders, one of them holds the majority of the company shares. Currently the firm has three employees and sixteen freelance collaborators. The firm has a net like structure, a coworking and an association linked to the firm support its activities, providing collaborators who are progressively integrated in the firm net structure and are considered

as a part of the firm. At the moment the partners are two but within some months they will become four. The firm's turnover is around € 200,000.

Company G is a family business. The control over the firm moved from the founder to his two sons. The company is currently managed by seven shareholders. There are twenty-four employees, the turnover is around three millions.

Company H has been established by two co-founders. Currently the shareholders are four, one of them is only a financial shareholder. The employees are sixty, the turnover is around seven millions.

Interviews

We carried out multi-respondents interviews in order to obtain more thorough, comprehensive and realistic descriptions of the decision making processes, in particular we asked the first interviewee (in most of the cases the CEO) to indicate for a further interview another firm manager/leader or a subordinate. In companies C and G we obtained access only to one respondent.

The interviews were divided into four sections. The first section included questions on the firm: firm's foundation year, number of employees, and ownership of the firm. In the second section we investigated the leadership structure. We asked each respondent to describe how the leadership activity is carried out inside the firm. From this report we were able to match the description provided with leadership structure categories (individual, distributed or shared leadership). This also provided us a frame of the effective number of people actually operating at the top of the firm (the "leaders" of the firm), which in most of the cases coincided with the operating business partners. In session three we asked each interviewee to identify two strategic decisions made within the firm, and to describe the decision making process used to make those decision. From the report we inferred which decision making processes has been adopted, among the ones identified by Vroom and Yetton (autocratic, consultative or group decision making). Finally, we asked the interviewees if the leadership structure and the decision making processes have changed with the growth of the firm in terms of employees and what were the main reasons of those changes.

Results and discussion

All the larger small firms reported changes in the participation in strategic decision making among leaders occurred due to the company growth. The changes in decision making processes seem to follow a similar evolutionary path in all the small companies interviewed, towards the adoption of consultative decision making processes. From the interviews it emerged that the main factors triggering these changes are the lower importance of the Motivation-time Attribute in larger small

companies compared with micro firms and an enhanced level of conflict accompanied by more difficulties in reaching the consensus. Both these factors lead to the establishment of a consultative decision making in larger small firms, while in micro firms autocratic or group decision making processes are adopted. We also analyzed the interplay between leadership structure and the decision making process adopted and we argue that the increase in the firm size may affect one of the levels without affecting the other, showing that leadership structure and participation in decision making among leaders are distinct and independent. A change in the leadership structure provokes a change in the participation in decision making among leaders, while the opposite does not occur. This supports our idea that the leadership structure is a contextual variables where strategic decision making takes place. Moreover, the changes in the leadership structure and in the participation in strategic decision making among leaders do not necessarily move "in the same direction" of participation. We argue that the interplay between the leadership structure and the participation in decision making among leaders is not so direct and deterministic as one could expect.

The contingency role of firm size on participation in decision making among leaders

We argue that while micro enterprises tend to adopt autocratic or group decision making processes, as the firm grows there is a progressively adoption of consultative decision making processes.

The adoption of group decision making in smaller firms can be explained by the need of sharing ideas and information. As it happens in company A, which adopt this type decision making process as the leaders stated: "In our company the decision making processes are always fully collaborative: we discuss every issue openly and frankly, we blindly trust the others' capabilities and that helps us to find easily consensus in all decisions we make". Instead, the main reason for the adoption of autocratic decision making processes appears to be the time factor, the Motivation-Time attribute in the Vroom-Yetton model, which has a stronger impact on a small rather than on a larger firm. This attribute seems to be also one of the main reasons of the change in the decision making processes as the company grows. "At the beginning of the company's activity we were operating in an "emergency situation", so many times it was necessary to make decisions even without the agreement of my partner. We had to act quickly, even if the chosen solutions were not optimal. Today we make more weighted decisions and the process is more participative. Now we are aware of what our visions and missions are and we only make decisions that are consistent with the tracks that we have already drawn. At first we went ahead in a zig zag way, we took what happened to be there, the decisions were less aware" says the CEO of the company H. What emerged seems to confirm the idea expressed by Friedrickson and Iacquinto (Fredrickson and Iaquinto, 1989), according to whom the organizational size has important implications on strategic decision

processes. Consistent with Mintzberg's observation that firms evolve to a planning mode as they grow (Mintzberg, 1973), Fredrickson and Iaquinto point out that an increase in size is accompanied by an increasingly comprehensive decision making process, i.e. by an "increasingly rational decision making" (Fredrickson and Iaquinto 1989: 520). In addition, the importance of the Motivation-Time attribute is consistent with the results obtained by Field and colleagues on the effect of situation attributes on decision method choice (Field et al., 1990). In fact, they found that "Motivation-Time (MT) [has] significant negative coefficients for the propensity to move from an autocratic to a group decision method. [...] [If] a leader is motivated to save time, subjects are more likely to stay with an autocratic compared to a group method" (Field et al., 1990, p.173). Other reasons of the progressive establishment of consultative decision making processes are the increased heterogeneity in the skills and competences of leaders and the subsequent increased level of conflict within the team. In its growth path the company faces a growing need for competences and skills and new leaders are included in decision making processes as bearers of new and diversified ideas and knowledge and this leads to more participative processes in larger firms. An emblematic case is represented by company E, founded by four members, all coders. Initially, the CEO used to take almost all the decisions, mainly because he was the only partner with some managerial skills and others was willing to delegate responsibility. Later, a legal, a financial and a human resource management specialist were employed because they held those skills that the co-founders did not have. These three experts became part of the board, and strategic decisions are currently made in meetings involving all these seven professionals. Their involvement in decision making is useful to bring different points of view into the discussion and to share the responsibility of the decisions. The CEO stated "We hired people to tell us what to do, not to tell them what to do". Something similar happened in companies F and G. Company F is going to include two new members into the board as experts of technological aspects. In company G, three employees who stood out for their skills and competencies were promoted to the role of leaders participating to the strategic decision making, partly also as a reward for proven competence and motivation.

The presence of new leaders involved in strategic decision making is functional in the share of responsibilities and ever-increasing corporate risks. The CEO of company H for example referred that at the beginning of the activity of the firm he used to make decisions alone: even though there was disagreement over the solutions, he pushed his decisions forward, since the losses were not very big anyway and did not cause serious financial problems. "The agreement comes later, when the solutions work" - he said. Now instead with larger investments at stake and greater corporate risks, he feels the need to meet the other leaders and to share the responsibility of the decision. Moreover, while in smaller firms CEO actively participates both in strategic and operational

activities, and in this way he owns all the necessary information to make strategic decisions, in larger companies the CEO drifts apart from operational activities e therefore needs to appoint and consult other leaders who are in direct contact with employees with different positions inside the firm, and who can collect the information needed to make strategic decisions.

The greater heterogeneity in leaders' skills and competences may lead, as a consequence, to a greater level of conflict among decisional team members, both of cognitive and affective type. As for the low level of conflict in smaller firms an emblematic case is represented by company A where the respondents report a total share and adherence to the company's goals. They also claim to be very open and honest in expressing their own ideas and that, as often as there is disagreement over different proposals, personal friction never takes place. In company C and D conflict never rises because strategic decisions are taken by the company's leader. It seems that in small firms conflicts, especially the affective ones, are little felt or not felt at all. In larger firms, instead, there is a growing disagreement between different proposals, the differences between what members consider important and primary are more perceived, more tension is felt and in some cases personal frustration is also reported. According to the CEO of company E, this type of conflicts is the natural consequence of the diversity of visions of people with different skills. On the affective conflict, which in this case also results in dissatisfaction and sometimes even hostility among some members of the team, he notes that it is normal when seven different people discuss issues they are personally involved in, as the management of a company heavily impacts on individual members personal lives. Related with the conflict, the increasing difficulty in reaching consensus in larger firms assumes importance. All surveyed firms say that they seek consensus especially in strategic decisions that, by their nature, require everyone's agreement. In this regard, the CEO of company G commented: "We have made strategic decisions in recent years that did not please everyone. Fortunately, members who did not share the strategic line left the company. Only those who shared it stayed and now we are more compact and united than ever, including employees". However, consensus is not always achieved, especially in larger companies, where disagreement among team members is greater. That is why the consultative decision making is more suitable in larger firms: it allows to look for consensus but if it is not reached, then the CEO assumes the responsibility of the final decision.

Summarising, we propose the following propositions:

Proposition 1

In micro enterprises autocratic or group decision making processes are adopted.

In larger small firms consultative decision making processes are adopted.

Proposition 2

The adoption of group decision making processes in micro firms can be explained by the need of sharing ideas and information among leaders

Proposition 3

The Motivation-Time attribute is stronger in micro companies and this leads them to establish autocratic decision making processes. Instead, in larger small firms decision are more comprehensive and less characterized by the Motivation-Time attribute, that is why in these firms leaders tend to adopt a consultative decision making process

Propostition 4

As the firm grows the team of leaders becomes more diversified in terms of skills and competences and this leads to an increased level of conflict among the leaders and an increasing difficulty in reaching consensus. These factors lead to the adoption of consultative decision making processes

The interplay between leadership structure and decision making processes

If we look at the leadership structure, which is a contextual variable in our study, we can notice some differences between micro and small firms. In particular, micro firms adopt an individual or a shared leadership, while larger small firms adopt a distributed leadership or an individual leadership. We suggest that an individual leadership is established especially in firms founded by a single entrepreneur, like in companies C and D. In these firms an individual leadership has been established from the beginning and then has been thereafter maintained. Shared leadership is established in micro firms, in particular within new ventures founded by entrepreneurial teams, which are cohesive and present high levels of collective visions and for these reasons they tend to establish a true shared leadership (Ensley et al., 2003). With the increase of the size of the firm, co-leaders tend to specialize in a specific role and to actualize a division of the leadership functions, leading to a progressive affirmation of a distributed leadership.

Our empirical research boosts the conceptual distinction between leadership structure and decision making processes that we postulated prior the research. This distinction appears clear either considering the current situation of the analyzed firms or considering the dynamic aspect of changes which occur along with the growth of the firm. From a static point of view, we can observe that a shared leadership does not necessarily correspond to a group decision–making type. Neither is a distributed leadership necessarily linked with a consultative decision making process, nor an

individual leadership with an autocratic decision making process. Moreover, analyzing how the decision making processes and the leadership structure change, the transformation do not seem to move necessarily along the same direction in the degree of participation in leadership activities and in strategic decision making. However, a link seems to exist between leadership structure and decision making processes. Among all the analyzed cases, only two small firms changed their leadership structure and in these cases the change in the leadership structure reflects on a transformation of the decision making processes. Instead, the opposite is not true, i.e. a change in the decision-making processes does not correspond to a change in the leadership structure. This supports our idea that the leadership structure is a contextual variable where strategic decision making takes place. If we look at company E there was a change in decision-making processes, which went from being autocratic to being consultative, without this leading to a change in the leadership structure, which remained individual. A similar situation occurred in companies A and F. In company A there has been a transition from group to consultative decision making process. This shift was driven above all by the greater confidence acquired by the leaders in making decisions of strategic nature and by the need for a more efficient division of labor. However, this did not result in a change in the leadership structure, which remained shared. In addition to being formally co-CEOs, the three co-leaders did not divide the leadership functions by assigning each one a different role, also because their skills are similar. Instead, the leading role is assumed from time to time by one of the co-CEOs, depending on the situation and on the issues, without any of them being identifiable as the leader of a given company function. In company F, a distributed leadership was established from the beginning, driven by the different skills of the two founding partners: one was an expert in the technological field, the other in marketing and communication. Despite this clear separation of competences, at first all the decisions were discussed and made together, above all the strategic ones. As the company grew, the two partners gained confidence in making decisions and the decision making process became consultative, with both partners reporting that they made strategic decisions on their own after consulting the partner. The entry into the board of two new members and leaders with technological functions has accelerated the transition towards the adoption of a consultative decision making processes.

Speaking about the two firms which changed their leadership structure, the transformations in the leadership structure and in the decision making processes go "in the same direction" in terms of participation of the leaders in the leadership activities and in strategic decision making in one case, while in the other one does not. In company G the leadership shifted from being shared to being distributed and the decision making processes from group decision to consultative. In company H the growth of the firm led to the shift from the an autocratic decision making to a consultative one

and from a distributed leadership to an individual leadership. The CEO of company H reports that at the beginning there was a stronger demarcation among the competencies of the two founding partners: one was in charge for commercial activities, the other one for the technological ones. In most of the cases, the decisions were made by the CEO alone, also because the firm activity was driven by the clients demand: "We were already lucky when we found some clients" - the CEO says. With the growth of the firm, the decisions have become much more shared, also because the strategy became more defined and the tasks more interconnected to each other than in the past. The greater number of employees contributed to the establishment of a consultative decision making because the contacts that both leaders have with the same employees boost them to interact with each other. At the same time, the leadership has become individual, as "now there is an increased need for someone who takes the final responsibility of coordinated actions".

We argue that the interplay between leadership structure and decision making process is not so direct and deterministic as one could expect. The two levels are distinct and independent and the increase in the firm size may affect one of the level without affecting the other. In most of the cases analyzed, the participation to strategic decision making changed, while the leadership structure remained the same. Also when the leadership structure changes, the participation to decision making may change "in the opposite direction" in terms of participation.

Figure 2 graphically represents the interplay between the participation in strategic decision making and the leadership structure in the companies surveyed.

Summarizing, we propose the following propositions:

Proposition 5

Leadership structure and participation in decision making among leaders are distinct and independent and the increase in the firm size may affect one of the level without affecting the other

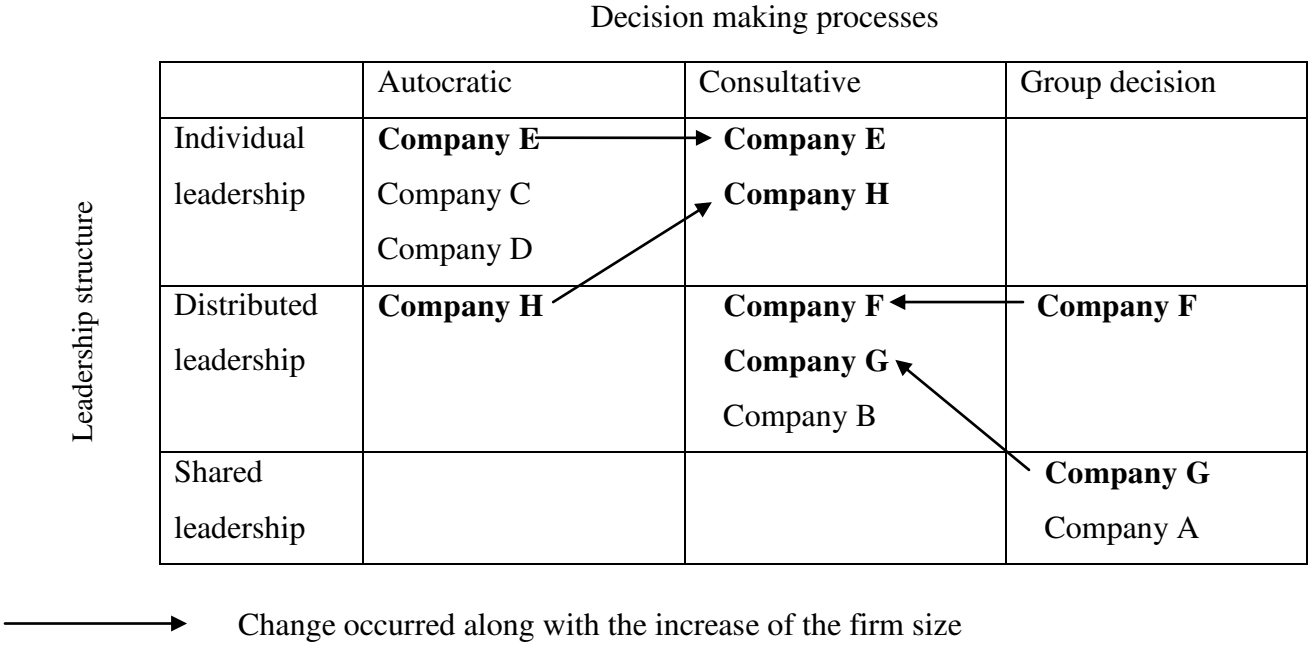
Proposition 6

A change in the leadership structure provokes a change in the participation in decision making among leaders, while the vice versa does not occur

Proposition 7

The changes in leadership structure and participation in strategic decision making among leaders do not necessarily move "in the same direction" of participation

Figure 2. Scheme of the interplay between participation in decision making among leaders and leadership structure



Conclusion

In this paper we analyzed how the participation in strategic decision making among leaders works in micro and small enterprises and how it changes with the growth of the firm in terms of increase in the number of employees. We also analyzed the interplay between the participation in decision making among leaders and leadership structure.

We found that micro enterprises adopt an autocratic or a group decision making. Instead, larger small enterprises adopt consultative decision making processes. The adoption of group decision making processes in young micro firms can be explained by the need of sharing ideas and information among leaders and of learning together how to deal with new issues. Instead, the adoption of autocratic decision making processes can be explained by the importance of the Motivation-Time attribute in micro firms. The progressive adoption of a consultative decision making in larger small firms it can be explained by two main reasons. Firstly, the Motivation time attribute becomes less important with the increase of the firm size. In addition, the decision making becomes more comprehensive. Secondly, as the firm grows there is an increased number of leaders, which leads to an higher level of conflict among the leaders and to more difficulties in reaching consensus. These factors lead to the adoption of consultative decision making processes

Speaking about the interplay between the participation among leaders and leadership structure we argue that leadership structure and participation in decision making among leaders are distinct and independent. A shared leadership does not necessarily correspond to a group decision making type. Neither a distributed leadership is necessarily linked with a consultative decision making process, nor an individual leadership to an autocratic decision making process. Moreover, the increase in the firm size may affect one of the levels without affecting the other. Indeed, a change in the leadership structure provokes a change in the participation in decision making among leaders, while the opposite does not occur. This supports our idea that the leadership structure is a contextual variable where strategic decision making takes place. Speaking about the dynamism of leadership structures and participation in decision making among leaders, we argue that the changes in leadership structure and participation in strategic decision making among leaders do not necessarily move "in the same direction" of participation. That is, if with the increase in the firm size there is less participation in the leadership activity (for example, a distributed leadership becomes an individual one), it does not necessarily mean that also the decision making among leaders becomes less participative (for example, it may change in the opposite direction, from being autocratic to being consultative, thus becoming more participative).

Our research provides two main contributions to the existing literature. Firstly, it enriches the literature on participation in decision making, providing insights on how participation in decision making differs in micro and small firms, on how it interacts with the leadership structure and on how and why decision making evolves when a micro firm becomes a small one. Moreover and maybe more importantly, we provide clarification on the distinction between leadership structure and participation in decision making among leader processes, while the previous literature has often mashed up the two concepts. We argue that the leadership structure is the context in which strategic decision making takes place. We believe that this demarcation has an explanatory power that goes far beyond the present research. Secondly, we suggest that the participation in decision making among leaders changes with the growth of the firm. This insight fills a gap in the literature on the growth of the firm, which has so far overlooked the changes in the participation in decision making among leaders which occur with the growth of the firm.

In conclusion, we present some limitations of the study and some suggestions for future research directions. The first limitation may be that in this paper we consider the contingency role of the firm size and we don't consider the role that could be played by the firm age. As this research is an in depth case study research we decided to focus only on one contingency factor, the firm size. However, we acknowledge that also the firm age may have a crucial role in affecting leadership structure and decision making processes in micro and small firms. We suggest that the study of the

role of firm age and its interplay with firm size, leadership structure and participation in decision making among leaders could represent an intriguing future research development. In particular, we suggest that that in order to analyze the complex interplay between these variables it might be particularly fruitful to apply a configurational approach.

Another limitation of the study may be that, despite the fact that all the cases analyzed adopt a similar business model as they all operate in the B2B tailor-made software development, still differences exist in the specific strategies they adopt and in the products they sell. We recognize that producing different products may affect the decision making processes, the governance and leadership structure and the performance outcomes. However, the analysis of these aspects goes beyond the purposes of our study. We suggest that the role of the differences in the products produced on the decision making process and on leadership structures may be the topic of another study focused on this aspect.

Furthermore, we used qualitative methods to carry out an in-depth analysis. Future research could expand and validate our suggestions using quantitative or mixed methods. Secondly, as we compared only micro and small enterprises, a further development of this study could include also large enterprises. Thirdly, another fascinating research topic could be focused on firm growth stages instead of firm size and it might analyze how decision making processes evolve through all the stages of growth, for example carrying out a longitudinal study.

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CHAPTER 3

A CONFIGURATIONAL ANALYSIS ON LEADERSHIP AND STRATEGIC DECISION MAKING IN MICRO AND SMALL FIRMS

A CONFIGURATIONAL ANALYSIS ON LEADERSHIP AND STRATEGIC DECISION MAKING IN MICRO AND SMALL FIRMS

Abstract

This research aims at finding configurations linking leadership structure, degree of participation in decision making among leaders, firm age and firm size and at understanding which of these configurations can lead to the firm success. We carry out a fsQCA on 20 micro and small firms operating in the software development industry, twelve of them micro-enterprises (with less than ten employees) and eight of them small enterprises (from ten to fifty employees). We argue that a shared leadership can lead to the firm success in micro young firms when accompanied by a participative decision making. A distributed leadership can lead to the firm success in young firms, both micro and small ones, when accompanied by a participative decision making. An individual leadership can lead to the firm success in small firms, regardless the firm age and the degree of participation in decision making. Moreover we point out that some changes may occur in the leadership structure and in the participation in decision making due to the change of the age of the firm, not of its size. This suggests a more nuanced vision of the growth of the firm.

Introduction

Adopting the most suitable leadership structure and degree of participation in decision making among leaders is crucial for the success of firms of every age and every size. In micro and small enterprises operating in an high tech sector the ability to modify them according to the internal and external changes is particularly important, due to the strong uncertainty they have to cope with.

Several authors have highlighted that an effective leadership is crucial in handling with an increased complexity of the markets (DuBrin, 2001; Avolio et al., 2003; Sakiru et al., 2013). Leadership has a prominent role in particular in micro and small enterprises because the influence on employees is more direct (Sathe, 2003; Moriano et al., 2011; Franco and Matos, 2013). Despite the leadership has attracted the interest of scholar for decades, the literature focuses mainly on large enterprises and there is still limited research on the leadership in micro and small firms and even rarer are the empirical studies on the topic (Short et al., 2002; Franco and Matos, 2013). Some exceptions, i.e., some empirical studies on leadership in small enterprises can be found in papers by Matzler and his colleagues (2008), Thorpe and his colleagues (2009), Langowitz (2010), Lindgren (2012) and Franco and Matos (2013). Given the great importance of micro and small firms in the European economy - they represent the "backbone of the EU´s economy" (Muller et al., 2017) - and their

peculiarity, combined with the prominence of the leadership in this setting, there is the need of further research on the leadership in micro and small firms. We fill this gap in the literature addressing the topic of the leadership in micro and small firms in particular focusing on the leadership structures, i.e. distinguishing between individual leadership, shared leadership and distributed leadership. This represent a novelty in the literature, because the investigation on leadership structures has been so far overlook (Ensley et al., 2003; Ensley et al., 2006;

In particular, our research aims at analyzing configurations of leadership structures and degree of participation in strategic decision making among leaders at different age and size of the firm. We analyze at the same time the leadership structure and the participation in strategic decision making among leaders because we argue that, while the leadership structure is the context within strategic decision making takes place, analyzing the participation in decision making among leaders helps in having a more comprehensive understanding of the leadership structures in micro and small firms.

The aim of the research is twofold: on one hand we aim at finding which leadership structures and degree of participation in decision making are associated to the firm success in micro and small enterprises; on the other end we want to look for differences and similarities between micro and small firms. In order to do it, we employ a fuzzy set qualitative comparative analysis (fsQCA) based on qualitative data collected through 20 semi-structured interviews with the leaders of micro and small firms operating in software industry.

Our research contributes to the literature in several ways. First of all we provide an empirical analysis on the connections between leadership structures (here we use this term to refer to individual, shared and distributed leadership) and participation in decision making among leaders. These concepts are regarded as distinct and at the same time we analyze their interplay and their joint effect on firm success, while previous studies have analyzed them separately or in other cases they have confused them (e.g. Patton and Higgs, 2013). Moreover, we connect them to the firm age and size, providing configurations which include all these causal conditions. While the previous literature studied the evolution of the leadership as the firm becomes older and larger, the same cannot be said for the participation to decision making among leaders. Thus, our research analyzes connections among the causal conditions which have not been adequately addressed before.

Secondly, the variable age is crucial in our research, as it allows us to investigate how these mechanisms can undergo some changes not only with the increase of size of the firm but also with the "mere" flow of the time, which, we argue, plays a role in consolidating or perturbing existing settings. Finally, our study focuses on micro and small enterprises. We argue that, while a lot of studies have been carried out on large companies (both regarding leadership and participation in the

decision making), still there is a lack of studies regarding these aspects and especially their interplay in small firms.

Theoretical background

Our work is rooted on the literature concerning three main research areas: stages of growth of the firm, leadership and co-leadership (in particular we focus on the distinction between shared and distributed leadership) and participation in decision making.
Here below we analyze each of these research streams in more detail.

Development stages and firm success

Our research revolves around the idea that the firm may or should adopt a certain leadership structure and a degree of participation in decision making among leaders according to its age and size. Most of young and small companies fail because of the so called "liability of newness" (Stinchcombe, 1965) and of adolescence (Bruderl and Schussler, 1990) and because of the "liability of smallness" (Freeman et al., 1983; Hannan and Freeman, 1984; Sutton, 1997). We suggest that one of reason why this happens is because firms does not set the right leadership structure and does not design their decision making processes among leaders on a participation degree which can help the firm to be successful in that specific stage of development.
This perspective connects our work to the literature on the stages of growth of the firm. The multi-stage models usually assume that a firm has to pass through a predictable series of stages in order to grow and reach sustainability (Moore 1959; Chandler, 1962; Scott 1970; Starbuck, 1971; Rhenman 1973; Adizes, 1979; Cooper 1979; Abernathy and Utterback, 1982; Moore and Tushman, 1982; Quinn and Cameron 1983; Miller and Friesen 1984; Van de Ven, Hudson and Schroeder 1984; Smith, Mitchell and Summer 1985).
Some scholars have linked the development stages to the resources base view of the firm, according to which firms are bundles of resources and capabilities which allow the firm to achieve competitive advantage and sustainability over time (Penrose, 1959; Wernerfelt, 1984; Cool and Schendel, 1988; Hansen and Wernerfelt, 1989; Barney, 1991; Roberts, 1991; Grant 1991; Blaydon et al., 1999; Lockett and Thompson, 2001; West and De Castro, 2001; Oakey, 2003; Wade and Hulland, 2004). We rely on this perspective, in particular on a paper by Vohora and his colleagues (2004), for the assessment of the firm success in our research. Vohora and his colleagues (2004) point out the role of the "critical junctures" in the growth development which are characterized by the necessity of developing certain capabilities or of acquiring certain resources. They identify four

stages in the development of university spinout companies and four "critical junctures" at the interstices between phases, which the firms have to overcome in order to proceed to the next phase of development. A "critical juncture" is defined as a "complex problem that occurs at a point along a new high-tech venture's expansion path preventing it from achieving the transition from one development phase to the next. [...] If the critical junctures remain unresolved for a prolonged period of time, the venture will eventually fail." (Vohora et al, 2004, p. 159, 168). Facing these critical junctures the firm has to acquire or develop the resources and capabilities necessary to the firm in the next phase of development.

In the research phase the technology is developed and the intellectual property assets are created and afterwards the firm faces its first critical juncture, the opportunity recognition, during which a match between the technology/solution developed and an unfulfilled market need has to be found. Thus, the entrepreneurs has to develop the first capacity that is to combine technical and scientific knowledge with the knowledge and understanding of the market, in order to propose a commercially feasible offer. If this juncture is overcome, the firms enter the opportunity framing phase, during which the entrepreneurs have to define feasible applications of the technology and clarify which market segments are fit to target. The next step is the critical juncture of the entrepreneurial commitment: the entrepreneurs need to be financially and emotionally full-time committed in the establishment of the company. During the subsequent pre-organization phase the entrepreneurs have to define and decide which resources, capabilities and knowledge to develop, to acquire or to access at present or in the future and which ones prioritize. Next, the firm encounters the critical juncture of credibility, during which the entrepreneurs have to prove or to acquire the capacity of accessing key resources necessary to the firm for starting operations, in particular financial and human resources. Most entrepreneurs fail in exhibiting enough credibility towards investors and clients, usually because they don't show enough commercial and managerial knowledge, skills and experience. As far as VCs are concerned, these observations are in line with other papers, which underline that the human capital, including the entrepreneurial team business experience, is one of the decisive selection criteria for a VC to invest in a startup (Baum and Silverman, 2004; Clarysse and Moray, 2004; Drover et al., 2013; Hoening and Henkel, 2015). As far as the clients are concerned, the firm needs to appear legitimate and reputable. If the firms succeed in overcoming this critical juncture a new phase starts, the re-orientation phase: as the firms grow, the newly developed or acquired resources need to be integrated and continuously re-configured adjusting them to the external and internal changes. This re-configuration can come in the form of changes in the business model and in strategy or in the establishment of routines. This phase is followed by the last critical juncture of sustainable returns. During this critical juncture the

firms have to develop the ability to create value from existing and continuously newly acquired resources, information, knowledge and capabilities, transforming weaknesses and liabilities into strengths. This ability allows the firms to create returns in a sustainable manner: they can come in the form of payments from costumers or financing from investors. While during the critical juncture of credibility the capabilities to be developed refer to the generation and mobilization of resources, in the critical juncture of sustainable returns the entrepreneurs have to develop organizational and managerial abilities of coordination and delegation of tasks, allocation and manipulation of resources and design of routines and of formal or informal organizational structures and processes. Finally, the firms enter the sustainable returns phase: having solved the uncertainties of the previous phases, the firms follow a defined and precise business model in an highly focused way and they become established firms.

Leadership and co-leadership

Leadership has been often conceptualized as an activity carried out by an individual. Most of the literature on leadership describes the characteristic a leader has to possess or the leadership style he can adopt (e.g. transformational or transactional leadership). However, this "heroic" vision of the leadership seems to be not always capable of describing the actual leadership in organizations, especially in companies. As a matter of fact, "plural" forms of leadership are more and more common within companies, also in response to the necessity of coping with fast markets and increased ambiguity and complexity, which lead companies to share the leadership responsibilities among coordinated and interdependent co-leaders (Gronn, 2002).

Several authors have pointed out the difficulties in carrying out a plural leadership, in particular the risks are potentially paralyzing conflicts and unclear accountability (Fayol, 1949; Stewart, 1991; Locke, 2003; Alvarez and Svejenova, 2005; Schumpeter, 2010). We argue that the existence of difficulties in managing plural forms of leadership is one of the reasons why it is important to investigate deeper plural leadership settings. In particular, there is a need of configurational or contingency models which can describe under what conditions plural leadership is feasible and fitting. In recent years plural forms of leadership are gained more and more attention from scholars (Avolio et al., 2009; Bolden et al., 2011; Fitzsimons et al., 2011; Denis et al, 2012; Gibeau et al, 2016). This growing body of literature, however, still lacks of internal consistency (Denis et al, 2012). In particular, the terms most frequently used, "shared leadership" and "distributed leadership", have been employed in several different ways and have been confused frequently. "Shared leadership" has been developed in the team-based literature and derives from the concepts of self-leadership, empowerment, emergent leadership, team autonomy and self-management (Manz

and Sims, 1980, 1987, 1989, 1991; Hackman, 1987; Kouzes and Posner, 1993; Avolio et al. 1996; Houghton et al., 2003). This stream of research emphases the importance of group dynamics, such as trust, commitment, mutual and interactive influence and self-efficacy.

The concept of "distributed leadership" has been developed mainly in the educational sector. In this case there is a formal structure of division of the leadership labor, based on different expertise of the co-leaders or on different interests which need to be represented at the top of the organization. In this setting, thus, each co-leader take on a specific "configuration of tasks" (Gronn, 2002, p. 428)

As there is no consensus on the definitions of "shared and "distributed" leadership, we have to clarify what we mean using these terms. First of all, we point out that we deal with the formal leadership at the top of the organization. We use the term "distributed leadership" to describe a specialized and differentiated leadership (Hodgson et al. 1965): each leader occupies a focused, narrow and specialized area and there is no duplication between the functions of the leaders. In this setting "there is a role specialization among the co-leaders, such that each one is in charge for a different group of tasks consistent with his/her expertise and competences" (Pittino et al, 2018, p. 95). For example, in technology-based firms there can be a leader who is responsible for technological issues and another one dealing with commercial and administrative ones. We use the term "shared leadership" when there is an overlapping between the roles of the two leaders, as you cannot recognize a clear division in their leadership tasks. This setting "is characterized by the equal and undifferentiated attribution of organizational leadership across TMT members. In these arrangements, each member has the same structural power in the company management (for example, all the members hold the formal CEO title) and at the same time, company leadership is carried out by the team as a whole, with various degrees and forms of mutual influence among the members" (Pittino et al., 2018, p. 95; see also Pearce, 2004; Ensley et al., 2006, Carson et al., 2007; Krause et al., 2014). Moreover, we consider also the individual leadership setting as an option. We argue that the applicability and convenience of adopting one of these three settings depend on internal factors, among which the firm age and size. As a matter of fact, our paper aims at finding configurations describing at which conditions a certain leadership setting can lead to the firm success.

The success of co-leadership settings has been related to individual, relational and environmental factors (Gibeau et al., 2016). Co-leadership has been found to be successful when implemented in context characterized by competing logics (e.g. creative, healthcare or education organizations, see for example Court, 2004; Gronn and Hamilton, 2004; Reid and Karambayya, 2009; Fjellvaer, 2010; Empson et al., 2013; Bhansing et al., 2012; Reid, 2015) or by complexity and diversity of roles, i.e. in large organizations, in particular in cases of geographical expansion, where each co-CEO takes

regional responsibilities (Troiano, 1999; Alvarez and Svejenova, 2002; O'Toole at al., 2002; Arnone and Stumpf, 2010, Arena et al., 2011). It has also been analyzed during transitions (e.g. mergers and acquisitions, see for example Jaklevic, 1999; O'Toole et al., 2002; Dennis et al., 2009; Arnone and Stumpf, 2010; Arena et al., 2011; Krause et al., 2014) and in family businesses, in cases of generational transition to the siblings or when a non-family manager comes up aside a family member at the top of the company (Alvarez and Svejenova, 2002; Dennis et al., 2009; Arena et al., 2011; Rahael, 2012; Miller et al., 2014). However, there are still few studies on the co-leadership in micro and in small firms: this represents a promising field of research. Several authors highlight that co-leadership settings are quite common in entrepreneurial teams, as the establishment of a new venture is often the outcome of a team effort, rather than of an individual one (Gartner et al., 1994; Lechler 2001; Daily et al. 2002; Ensley et al. 2006; Schjoedt and Kraus 2009; Hmieleski et al. 2012; Klotz et al. 2014). Shared leadership has been found to improve entrepreneurial team performance (Ensley at al., 2006; Zhou et al., 2015; Zhou, 2016). Shared leadership is suitable for entrepreneurial teams because the activity of founding a new venture is complex and unstructured and requires creativity and interdependence (Bryant, 2004; Pearce, 2004; Carson et al., 2007). Moreover, a single entrepreneur rarely has all the information, skills and knowledge required to successfully lead a new venture team (Pearce and Sims, 2000).

Our research creeps in this stream of research, specifically addressing the co-leadership in micro and small firms. Moreover, we expand this literature analyzing patterns of successful leadership settings at different firm age and size.

Participation to the decision making among leaders

The participation in the decision making process among leaders is a crucial element to take into consideration in order to understand the strategic decision making within a firm. Most of the papers in the decision making literature refer to the TMTs (top management teams) in large companies. The concept of participation has been related to the concepts of "centralization and "decentralization" of the decision making. In some papers the participation in decision making has been studied at a TMT level (Hambrick and Mason, 1984; Eisenhardt, 1989; Hambrick, 1994; Hambrick, 1997; Boone and Hendriks, 2009), while in other works it has been related to the employees participation (Vroom and Yetton, 1973; Stasser & Titus, 1987; Mumford & Gustafson, 1988; Vroom and Jago, 1988; Kazanjian and Drazin, 1990; Campion et al. 1993; Latham et al. 1994; Edmondson, 1999; De Dreu and West, 2001). The two layers are not always so clearly defined, i.e. some papers refer to the concepts of "participation" or "decentralization" referring both to the participation of the TMT members in the decisions and of employees or middle-managers.

Indeed, the idea itself that the TMT is stable has been criticized (see in particular the work by Roberto, 2003 on "stable core and dynamic periphery in top management teams").

In order to make the distinction and the relationships between leadership structures and strategic decision making clearer, we decided to focus on the decision making among formally appointed leaders, not taking into account the possible presence of employees participating in strategic decision making.

The previous literature considered both positive and negative consequences of participation in decision making. Several works have shown the positive effect of participation in decision making: it allows the information exchange, sharing and integration (Stasser & Titus, 1987; Edmondson, 1999; Boone and Hendriks, 2009) and the greater amount of information pooled boosts the decision quality and allows to de-bias decision making (Boone and Hendriks, 2009), in particular in settings characterized by asymmetric information distribution (also called hidden profile, Brodbeck et. al., 2007) or by complexity and uncertainty (Baum and Wally, 2003). Moreover, participation fosters the commitment of people involved in the decision making process, even in the implementation of decisions (Vroom and Yetton, 1973; Mumford & Gustafson, 1988) and it stimulates the confidence of team members in finalizing the tasks (Latham et al., 1994; Phillips, 2001).

Other works, on the other hand, point out that participation to strategic decision making can slower the decision making process (March and Olsen, 1976; Staw, Sandelands, and Dutton, 1981; Vroom and Yetton, 1973). If the CEO already possesses enough knowledge, he might tend to not involve other managers in the decision making (Buyl et al., 2011). In a seminal work, Eisenhardt highlights the importance for the CEO to consult the entire team in regular meetings and in particular to seek the advice of the most experienced counselors. She shows that this process speeds the decision making process, rather than slower it (Eisenhardt, 1989). Another reference work in the literature on the participation in decision making is the paper by Arendt and her colleagues (Arendt et al., 2005). They present two dominant models in the research on decision making at the top of the organization: the CEO model, which focuses on the role of the CEO as a lone decision maker and the TMT model, which stresses the importance of sharing the decision making (see the stream of research on the behavioral integration, a construct introduced by Hambrick, 1994). They propose a third alternative, the CEO-Adviser model "which blends individual and group decision making" (Arendt et al, 2005, p. 682). They suggest that while the CEO model is more suitable for small and young companies, the TMT model is more appropriate for large and mature firms. The CEO Adviser model, instead, is suitable for firms which are not too small but at the same time they are mature enough to have already overcome the entrepreneurial stage (Arendt et al. 2005, p. 695).

In our work, we want to investigate how the participation in decision making is related to different leadership structures and to different age and size of the firm.

Method

In order to analyze the interplay between leadership structures, decision making processes among leaders and firm age and their effects on firm success we employ the fuzzy set qualitative comparative analysis (fsQCA) based on qualitative data collected through semi-structured interviews. The fsQCA is a methodology introduced by Charles Ragin (1987; 2000; 2008) originally developed for studying political and sociological phenomena involving medium samples (such as comparisons between countries). The peculiarity of the fsQCA is that it analyzes how *patterns* of multiple independent variables (here called conditions) relate to a dependent variable (here called outcome). This differentiates the fsQCA from other quantitative methods which analyze the effect of each variable in isolation.

The fsQCA is gaining greater and greater attention in the management field (see e.g. Grandori and Furnari, 2008; Fiss, 2011; Soda and Furnari, 2012; Garcia Castro et al., 2013; Ganter and Hecker, 2014; Misangyi and Acharya, 2014; Aversa et al., 2015; Furnari et al., 2016; Munoz and Cohen, 2017; Pittino et al., 2017; Proksch et al., 2017). We chose this methodology for several reasons. First of all, the fsQCA allows to identify how the causal conditions work in combination influencing the outcome. This characteristic of fsQCA is particularly useful in our research because we aim at analyzing the interplay between the causal conditions and their combined effect on the firm success. We suggest that under certain conditions some attributes can support the others in leading to the outcome (firm success). For example, a distributed leadership can be supported by a participative decision making in producing the firm success in small enterprises. Thus, we are interested in analyzing the joint action of different conditions because this allows us to understand the phenomenon in its complexity. Secondly, the fsQCA enables to find out different paths, i.e. configurations of causal attributes, leading to the same outcome. We argue that success can be reached through different combinations of participation in decision making and leadership structures, at different age and size of the firm. That is why a configurational approach is appropriate for our research. Finally, fsQCA allows the analysis of medium n samples (Ragin, 2008). We decided to carry out our research on a sample of 20 cases because we evaluated that, consistently with the research questions, that was the best size for retaining the richness of case data providing at the same the necessary homogeneity and heterogeneity among cases. In particular, the

firms in our sample are heterogeneous in their size and age and they are either successful or unsuccessful (firm success is the outcome in our analysis).

Sample

Our selection criteria in the choice of the firms are the following: a) the firm has less than 50 employees (on the basis of the European definition of small business); b) the firm operates in the software development industry; 3) the firm is at least one year old. We selected companies located in Italy (in the area of a small town called Udine) and in Germany (Munich), in particular 8 companies are Italian and 12 are German. We decided to select companies from two different institutional and cultural contexts because this might allow us to observe similar, invariant dynamics which are common to different environmental conditions. In each firm we interviewed the CEO in person or by phone (in some cases all the CEOs were interviewed or the CEO with another partner). The duration of interviews ranges from 40 minutes to about two hours. Each interview has been recorded and transcripted. Besides collecting data carrying out semi-structured interviews we also use a secondary source, the database Amadeus, in order to check the truthfulness of what stated by the interviewees about the number of employees, the year of firm's foundation, the firm's turnover and the composition of the board of shareholders. The sample comprises 20 firms, all operating in the software development industry. The names of the companies are anonymized, we will refer at them with fantasy names. We performed two different analysis, one for micro firms (up to ten employees) and one for small firms (from ten to fifty employees). This is consistent with our research questions, as the goal of the research is to find configurations which lead to the firm success and to look at the differences between the two groups. In order to fulfill this objective, we separated the two groups of micro firms and small firms in our sample, obtaining two samples which include 12 firms and 8 firms respectively.

Outcome and conditions

The outcome in our research is the firm success. What is the best way to define and to measure firm success it's a contended matter between scholars, in particular in dealing with small businesses or when there is the necessity of comparing firms of different age and size. In our case, we purposely made up an heterogeneous sample in terms of age and size. For this reason financial measures, typically used to assess firm performance and success, are not suitable for our work. For example, it is quite likely that a firm aged 20 years and with 40 employees has a greater turnover than one which is three years old and has ten employees, but this does not mean that the younger firm in not successful, because it can be regarded as successful taking into account its age and size. In small and young companies resources and capabilities are not fully developed yet and thus it is important

to understand how they can evolve and potentiality be successful. That is why, we adopt a dynamic perspective of firm success (Clarysse, Moray, 2004), assessing the firm success on the basis of the firm potentiality, thus observing what the firm can become and not only taking a static picture of the firm current situation (as it appears in financial figures). In order to do so, following Clarysse and his colleagues (Vanaelst et al., 2006), we base the assessment of the success of the firm on the paper by Vohora and his colleagues (Vohora et al., 2004), referring to the overcoming of some critical junctures in the development of the firm. As previously described, these critical junctures are: 1) opportunity recognition; 2) entrepreneurial commitment; 3) credibility and 4) sustainable returns. We also consider the firm turnover to help to assess the firm success. To ensure a more comprehensive and objective assessment of the firm success, it is evaluated by three researchers.

The use of evaluations made by researchers is a common practice in management research (see e.g. Eisenhardt, 1989; Bingham and Eisenhardt, 2011; De Dreu and West, 2001). Relying on multi-raters assessment helps to de-bias the subjectivity of this measurement. Moreover, in our research this measurement backs up the "objective" measurement of turnover, which was also traced. In this way, we enrich the analysis considering both subjective and objective performance measures (Naman and Slevin 1993; Govindarajan 1988) and considering at the same time a short-term indicator, the financial measure of turnover, which reflect the current state of the firm (Birley and Westhead, 1994; Barney, 1997) and a long-term indicator, an index built by us, which consider also the firm's ability to thrive in the long run.

Out of the three researchers involved in the assessment of the firm success, only one took part in the data collection phase, the other two based their judgments on the transcriptions of the interviews. Each researcher rates each firm interviewed using the following 7-point Likert scale built by us:

- In my opinion the firm is successful
- The firm has overcome the critical junctures typical of its life-cycle phase
- The firm has the prerequisites or the right bases to be sustainable over time

We perform a factor analysis, obtaining that clearly there is only one factor, the Cronbach alfa is equal to 0,989. Then, we calculate the inter-rated reliability using the Cohen's kappa, obtaining a value of 0,81. We check the robustness of this value calculating also the Spearman Rho and the intra-class correlation coefficient, obtaining values of 0,901 and 0,801 respectively. We then calculate the median of the assessments by the three raters. The same multi-raters method is used to assess the degree of participation in decision making. In this case, the same three raters make their judgments using a 3-item 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree", drawn from a paper by Campion and his colleagues (1993) which has been applied

by eminent scholars (De Dreu and West, 2001). In the study by De Dreu and West the Cronbach alfa of the scale was 0,83. The three items of the scale are the following:

- All the members of the leaders' team have a real say in how the team carries out its work
- Most members of the leaders' team get a chance to participate in decision making
- The leaders' team is designed to let everyone participate in decision making

The Cohen's kappa used to calculate the inter- rater reliability is 0,69. A value greater than 0,61 is usually considered "good" or "substantial" (Cohen, 1960; Altman, 1991; Marston, 2010; McHugh, 2012). The Spearman Rho and the intra-class correlation coefficient are 0,846 and 0,677 respectively. Also in this case we calculate the median of the assessments by the three raters. Speaking about the leadership structure, we ask each respondent to describe how the leadership activity is carried out within the firm. From this report we are able to match the description provided with leadership structure categories (individual, distributed or shared leadership). The ownership structure was also detected in order to better understand the leadership structure, but this condition has not been included in the analysis. Finally, we take into consideration the age and size of the firm.

Analysis

The first step to perform in the fsQCA is the calibration of the causal conditions and the outcome.

We consider the leadership structure variable as a crisp-set condition. In particular, we put one for the presence of a certain type of leadership structure (e.g. individual leadership) and zero for the absence of the other leadership structures (e.g. shared and distributed leadership). Thus, the three causal conditions individual leadership, shared leadership and distributed leadership are mutually exclusive. The other variables are regarded as fuzzy conditions.

As we divide the whole sample in two sub-groups of samples, one including micro firms and the other one including small firms, we have to calibrate all the fuzzy variables (age, decision making and firm success) in a different way in each of the two samples. For all these variables we calculate the percentiles of 25%, 50% and 75%, setting the 25% percentile as the non membership threshold, the 75% percentile as the membership threshold and the 50% percentile as the cross-over point. You can find the calibration table below.

Table 1. Calibration Table for fsQCA

Company	Age	Size	Individual leadership	Shared leadership	Distributed leadership	Participation in decision making	Firm success
ARTIFINTEL	1	3	0	1	0	4,89	4,33
PENTA	20	9	0	0	1	4,00	4,00
DIGITMAL	19	3	1	0	0	2,67	3,55
SOCIALMED	5	7	1	0	0	2,44	3,00

ALMATER	3	25	1	0	0	3,67	6,00
NET	2	21	0	0	1	3,78	3,89
SYNCOPOST	24	31	0	0	1	4,67	5,44
INDUSTRY	16	42	1	0	0	3,67	6,33
POINTELCOM	3	10	1	0	0	3,00	4,00
SOLAREN	6	15	1	0	0	2,00	5,44
NEXERAX	3	25	0	0	1	4,00	6,00
SIRIUSAL	37	10	0	1	0	5,00	4,00
CONNECTIKA	20	20	0	0	1	4,33	5,33
ANALYSTIC	1	9	0	0	1	5,00	4,55
OMICRON	2	7	0	0	1	4,00	4,00
CONSULTSOFT	27	15	0	0	1	4,33	4,99
HEALTHPRO	2	7	0	0	1	4,67	4,00
SINTECNO	11	6	0	0	1	5,00	3,89
SIGMATEC	3	10	0	0	1	5,00	5,00
SECURITY	11	7	1	0	0	4,33	5,00

Then, we perform an analysis of the necessary and sufficient conditions using the fsQCA software 3.0.

Results

We performed two different analysis on micro and the small firms. For each of these groups we carried out an analysis of necessary conditions, both on the firm success and the lack of success. Moreover, for each group we carried out an analysis of the sufficient conditions, also in this case both on the firm success and for lack of the firm success. The need of considering the configuration for the success and for the lack of success separately arises from the causal asymmetry of configurations which implies that configurations for the firm success are not necessarily the opposite or the negation of the configuration for the lack of success; indeed, the "presence as well as the absence of any attribute may produce the same outcome, depending on its combination with other attributes" (Misangyi et al., 2017, p.14). In this paragraph we will present all the results of the analysis. Their interpretation and links with previous literature will be discussed in the next paragraph.

Analysis of necessary conditions

In the fsQCA a condition is necessary for a specific outcome if that condition is always present when the outcome occurs. In other words, the outcome cannot occur if the condition is absent (Ragin, 2008). The consistency threshold usually used for necessary conditions is 0.90. The only condition which has a consistency value close to this threshold (as you can see in Table, equal to 0.8978) is the lack of shared leadership in the analysis on the lack of firm success in micro firms.

As this value does not exceed the threshold of 0.90, we can conclude that none of the conditions is necessary to achieve the firm success or the lack of firm success in micro firms.

Table 2. Analysis of necessary conditions for micro firms

	Firm success			Lack of firm success	
	Consistency	Coverage		Consistency	Coverage
f.dm	0.68	0.73	f.dm	0.41	0.38
~f.dm	0.41	0.45	~f.dm	0.71	0.66
f.age	0.37	0.41	f.age	0.68	0.64
~f.age	0.67	0.71	~f.age	0.38	0.34
Lind	0.23	0.38	Lind	0.45	0.63
~Lind	0.77	0.62	~Lind	0.55	0.38
Lshar	0.22	0.72	Lshar	0.10	0.28
~Lshar	0.77	0.49	~Lshar	0.89	0.50
Ldistr	0.54	0.58	Ldistr	0.45	0.42
~Ldistr	0.46	0.49	~Ldistr	0.55	0.51

* f.dm: participation in decision making; f.age: age; Lind: individual leadership; Lshar: shared leadership; Ldistr: distributed leadership; the symbol "~" means "absence of"

consistency of absence of shared leadership in both the analysis for the firm success and the lack of firm success. However, this value is due to the fact that no small firm in the sample adopts a shared leadership. This is clear in the analysis, as for the shared leadership condition the coverage is not available and the consistency is equal to zero. The consistency of all the other conditions is below 0,90. We can conclude that none of the conditions is necessary to achieve the firm success or the lack of the firm success in small firms.

Table 3. Analysis of necessary conditions for small firms

	Firm success			Lack of firm success	
	Consistency	Coverage		Consistency	Coverage
f.dm	0.35	0.37	f.dm	0.65	0.67
~f.dm	0.69	0.67	~f.dm	0.39	0.37
f.age	0.42	0.43	f.age	0.66	0.65
~f.age	0.66	0.66	~f.age	0.42	0.42
Lind	0.60	0.81	Lind	0.14	0.19
~Lind	0.39	0.32	~Lind	0.86	0.68
Lshar	0.00	NA	Lshar	NA	0.00
~Lshar	1.00	0.50	~Lshar	1.00	0.49
Ldistr	0.39	0.32	Ldistr	0.86	0.68
~Ldistr	0.60	0.81	~Ldistr	0.14	0.19

* f.dm: participation in decision making; f.age: age; Lind: individual leadership; Lshar: shared leadership; Ldistr: distributed leadership; the symbol "~" means "absence of"

Table 4. Sufficient configurations leading to the firm success and to the lack of firm success in micro and small firms

	Micro firms			Small firms			
	Configurations for the firm success		Configurations for the lack of firm success	Configurations for the firm success		Configurations for the lack of firm success	
Configs.	1	2	3	1	2	3	4
Antecedents							
Age	⊗	⊗	●		⊗	⊗	●
DM	●	●	●		●	⊗	●
Lind	⊗	⊗	⊗	●	⊗	⊗	⊗
Lshar	●	⊗	⊗	⊗	⊗	⊗	⊗
Ldistr	⊗	●	●	⊗	●	●	●
Raw Coverage	0.142	0.372	0.204	0.604	0.188	0.237	0.601
Unique Coverage	0.142	0.372	0.204	0.604	0.188	0.199	0.563
Consistency	1,000	0.882	0.864	0.813	0.800	0.777	0.807
Solution Coverage	0.514		0.204	0.792		0.801	
Solution Consistency	0.912		0.864	0.810		0.791	

Legend: **Age** - If present, the firm is old; **DM** - Decision making. If present, the decision making is participative; **Lind** - Individual leadership; **Lshar** - Shared leadership; **Ldistr** - Distributed leadership

"●" presence of a core condition, "⊗" the absence of this condition is core, "●" presence of a peripheral condition,

"⊗" absence of a condition. Blank cells indicate non-binding conditions.

Analysis of sufficient conditions

In Table 4 we show the resulting configurations leading to the firm success and to the lack of success in the two separated samples of micro firms (up to ten employees) and small firms (from ten to fifty employees).

Following the existing literature (Ragin and Fiss, 2008; Crylli et al., 2012), we take into consideration the intermediate solution and we distinguish between core and peripheral conditions confronting the intermediate solution and the parsimonious solution (core conditions are the ones which are present in the parsimonious solution and are included in the intermediate solution). The presence of a core condition is represented by a big black circle, while the presence of peripheral conditions by a smaller black circle. The absence is represented by a crossed circle; also in this case the bigger symbols represent the core conditions, while the smaller ones represent peripheral conditions.

First of all, we have to consider the consistency and coverage of the solutions, in order to understand if they are acceptable or not. The consistency "gauges the degree to which the cases sharing a given combination of conditions agree in displaying the outcome in question" (Ragin, 2008, p. 44). Instead, coverage, "assesses the degree to which a cause or causal combination 'accounts for' instances of an outcome... Thus, coverage gauges empirical relevance or importance" (Ragin, 2008, p. 44).

Looking at the consistency of the solutions, all the solutions show a good level of consistency, above the minimum value of 0,75 suggested by Ragin (2006). In particular, the solution related to the firm success in micro firms has a consistency of 0,912, while for the solution related to the lack of success the consistency is 0,864. Speaking about the solutions for small firms, the consistency of the solution related to the firm success is 0,810 and the consistency for the lack of success is 0,791. These figures mean that the set-theoretic connections between the configurations of causal conditions and the outcomes (firm success and lack of success, respectively), are integral and meaningful (Ragin, 2006).

Examining the coverage, we observe a difference between the solutions for micro firms and the ones for small firms. The solutions for small firms have a high level of coverage: 0,792 for the solution related to success and 0,801 for the lack of success. As a matter of fact, all the small firms of the sample are represented by these configurations, as each of them exhibits one of the configuration proposed (for success or for lack of success).

On the other hand, speaking about the micro firms we have a lower coverage. The solution for the firm success, has a coverage of 0,514 which is considered acceptable (Ragin, 2006; Ragin, 2008). Instead, the solution for the lack of success, which presents only one configuration, has a coverage

of 0,204. In other papers solutions with even lower coverage have been accepted (e.g. Misangyi and Acharya, 2014 presented solutions with a coverage of 0,10 and 0,04 respectively; Pittino et al, 2018 accepted an overall solution coverage of 0,194). However, in our case, due to fact that our sample is small, we argue that this value is too low to be considered acceptable. Indeed, only one case of the sample falls into this solution. That is why we present it table 4, so to present all the results obtained from the analysis, but we will not discuss this configuration in the next paragraphs. We believe, in any case, that this result is interesting because it shows that in micro firms many different ways leading to the lack of success exist. In other words, the low coverage implies that other pathways leading to the lack of success in micro firms, which didn't emerge from our analysis, may be adopted by firms.

From the analysis two configurations emerged for the firm success in micro firms, two configurations for the firm success in small firms and two configurations for the lack of firm success in small firms (see Table 5). We will explain and interpret each configuration going back to the cases in the sample which exhibit each configuration.

Firm success in micro firms

As a result of the analysis, we found two pathway leading to the firm success in micro firms.

Configuration "Interchangeable co-CEOs"

In the configuration 1 a shared leadership is accompanied by a participative decision making. As the shared leadership is present, the individual and the distributed leadership are absent: this derives from how we built the dataset, as we consider the three types of leadership as mutually exclusive (the same can be said for all the configurations). Moreover, there is the absence of the age condition: this means that the company has to be young (specifically, the age threshold in this case - represented by the cross-over point - is 4 years old).

A case adopting this configuration is the company ARTIFINTEL. This company is an early stage startup which is barely one year old. The company has been founded by three co-founders which are formally co-CEOs with an equal distribution of the shares. The co-founders knew each other before the establishment of the company and their relationship is characterized by openness, frankness and mutual esteem. They adopt a true shared leadership: there is not a clear division of the roles among co-leaders; on the opposite, all the co-leaders have the same structural power and each of them can substitute the others. They (all the three CEOs were interviewed) underline that, in order to lead a company in a shared manner, is necessary to have a perfect and absolute trust in the other co-leaders. Speaking about the decision making process, they always reach the consensus in

strategic decision making: a decision is not made if there is not the unanimity. They highlight that this participative way of making decisions helps them also to learn how to deal with issues, sharing information, stimulating each other intellectually and receiving the contributions from "three heads instead of one". They say that not only the final decision, but also the process is important, because doing things so closely together allows them to make some debriefing meetings during which they analyze what has been done well, what bad and what has to be changed. In this way, they can improve and build the capabilities needed to run the company. They underline that the very early stage of the company is a crucial element in determining both the adoption of the shared leadership and of a participative decision making. Indeed, they forecast that in the future they will discuss less about each decision because the limit of time will lead them to make more decisions in a more autonomous way. Moreover, they suggest that in the future the leadership could be more distributed, as they expect they will not have the time and all the knowledge required to be able to be in charge of all the different tasks within the firm.

Even if the company is quite young, it already exhibits a quite good credibility and reputation, rooted in the know-how and previous network of the co-founders, and it appears to be well grounded to reach the sustainable returns in the next future.

Configuration "Role specialization in micro and young firms"

The configuration 2 is characterized by the simultaneous presence of a distributed leadership and participative decision making in micro and young firms.

The companies ANALYSTIC, SIGMATEC and HEALTHPRO fall into this configuration.

All these companies are characterized by a clear definition of leadership roles among co-leaders. In ANALYSTIC the two co-leaders and co-founders have a 50/50 division of the shares. Still, only one of them is formally the CEO and takes over the commercial and business related part, while the other partner deals with the IT development, organizing also the work of the developers. In SIGMATEC the two co-leaders are both co-CEOs but there is a clear demarcation of their roles: one is the technical leader and the other one is the "sales guy". The ownership is equally divided between the two leaders, even if there is the presence of a business angel (15% is owned by the business angel and 42,5% by each of the two co-founders). HEALTHPRO is a university spin-off. The software was almost entirely developed before the establishment of the company, within an inter-department research project of the university. The three founders are shareholders but they are not involved in daily operative business and one of them is a professor of the university. Thus, they appointed a CEO who is also the CTO, he is the expert of the software and leads the company with other two leaders, one dealing with sales and the other one with operations. The CEO of

HEALTHPRO says: "We align on a lot of things together because we don't have a sort of company where there are departments. We work all three close together and I sometimes go to events or organize sales events or also the sales guys sometimes help with the customers for the success of the company. But the leadership is divided".

Speaking about the decision making process, all the companies underline that for them it is important to maintain an high level of participation in decision making. "I would say that above all we are relatively open to understand the better arguments and the better reasons... Not in any single case happened that we didn't agree. Maybe on minor stuff, but never at the strategic level, there is always consent" - says for example the CEO of ANALYSTIC. The CEO of SIGMATEC says "If there is a decision we should agree... it happens that we don't agree about something, then we have to continue discussing... for example if I don't agree with my mate, my co-founder, about something concerning his sector, then I trust him, we do in his way. So, sometimes there may be different directions, sometimes you do a step back, but always in harmony". All the three companies got an high score in the firm success assessment, positioning in the upper quartile of the distribution of the firm success in micro firms.

Firm success in small firms

We found two configurations leading to the firm success in small firms (from ten to fifty employees).

Configuration "Sole leader in small firms"

The configuration 1 presents the individual leadership as unique core condition. Other conditions are the absence of shared and distributed leadership, but as we said previously the absence of these conditions in presence of an individual leadership is inherent in the way we built the dataset.

The companies ALMATER, INDUSTRY and SOLAREN belong to this configuration.

The CEOs of all these companies claim that it is suitable adopting an individual leadership. "It is crucial that someone is responsible" - says the CEO of ALMATER. The CEO of company SOLAREN relates the individual leadership to the size of the firm "We are still a small company, we don't need much… the average age is 22 year old, we share the same space, we make decisions kind of jointly, anyone can talk to anyone else, we don't really have a hierarchy and in this kind of organization you don't need leaders, I mean, the automatic leader is me, as I am the CEO, I take responsibilities, I am also the most noticeable and mature, I mean in terms of knowledge and experience". The companies differ in their age: ALMATER is 3 years old, SOLAREN is 6 years ago and INDUSTRY is 16 years old. They differ also in their degree of participation in decision

making. In (company) SOLAREN the decision making is autocratic "When we have to make decisions, the final decision is made by me" - the CEO of the company reports. In the other two firms the decision making is more participative, in (company) ALMATER for example the decisions are made voting by majority, even if in contrast with the CEO opinion. All the companies have reached the sustainable returns threshold and exhibit quite good scores in the firm success assessment.

Configuration "Role specialization in young small firms"

The configuration 2 leading to firm success in small firms presents a combination of a distributed leadership and an high level of participation in decision making. Moreover, a core condition in the young age of the firm (in this case, below the cross-over point threshold of eleven years).

The company NEXERAX adopts this configuration. The company is 3 years old and it has 25 employees; this reveals, a good, even if not excellent, rate of growth for a startup. Also the turnover, of some millions, is a good result for its age. The leadership is clearly distributed among the three co-leaders: the CEO is responsible for sales, the COO is responsible for the daily business, the technology and the update running and the CTO is responsible for the product and the developing for the features. Speaking about the decision making process, the leaders meet weekly and the CEO defines the process as "quite structured" and adds that "there is a time when each one brings in new topics... then we decide and we are always we three, so if one is against, we try to understand him, but the other two make the decision. So two out of three make the decision... All of us are managers directors, we have the same decisional power".

Lack of firm success in small firms

We found two configurations leading to the lack of firm success in small firms.

Configuration "Role specialization and lack of participation in young small firms"

The configuration 3, leading to the lack of success, presents the joint presence of a distributed leadership and the lack of participation in decision making. An additional peripheral condition is the lack of age, i.e. the firm has to be young.

The company NET falls into this configuration. The company is 2 years ago and has 21 workers, including both employees and collaborators. We called it "NET" because of its net structure, comprising also freelancers who collaborate and work with and for the company, entering gradually in the company structure. As claimed by the CEO, this is a precise choice of the company, in order to avoid bureaucratic organizational structure and maintaining flexibility, with the collaborators

who can bring the work from outside the organization. Despite the large size, the firm has been regarded by the raters as unsuccessful, as it has obtained a score of 3,88, far below the other small firms.

The leadership is characterized by a very strong demarcation between the roles of the two co-leaders: "We have two different worlds, my partner represents the world of development and coding in general, and therefore a more engineering approach, and I am more on graphic and artistic aspects... Practically, he goes ahead on his own and I go ahead on my own... Each co-founder has created a team on his own, as if it were a team A and B competing but not in a negative sense, but to see who goes higher, like a positive internal competition to show who can generate more turnover. But in reality in most of the projects we make a bridge between the two skyscrapers and we are the union of the two skyscrapers" - says the CEO of the company.

Speaking about the decision making process, in this case it is only a bit participative, as expressed by the CEO: "If he makes a precise and technical decision, even a strategic one, he takes the responsibility for it because then as a result the whole company could be affected. There is a clear dualism in sectors in a univocal way, where in a clear way everyone puts his own responsibility, in the sense that he takes his responsibility if something goes wrong".

Configuration "Role specialization in old small firms"

The configuration 4, leading to the lack of success in small firms, combines a distributed leadership and a participative decision making in old small firms.

Companies SYNCOPOST, CONNECTIKA and CONSULTSOFT adopt this configuration. They are respectively 24, 20 and 27 years old. They all adopt a distributed leadership. In SYNCOPOST, which is a family business, the CEO is responsible of the marketing and the entire commercial section, while his brother deals with management control and management services, Also in CONSULTSOFT there is a clear functional division of the leadership labor. In CONNECTIKA each of the three co-leaders "have full freedom to manage resources and this full freedom is connected with the fact that there is a committee in which these leaders meet periodically, usually weekly, in which they decide together what to do, but then during the week or in the following months they carry out personally what has been decided during the meeting".

Speaking about the decision making process, the CEO of SYNCOPOST stated that "there is always agreement", on the opposite, he complains that sometimes there is too little disagreement, because the human and family ties stand above the issue on the table. Also in CONNECTIKA they try to reach everyone's consensus and "usually in the end everyone agrees". The CEO of CONSULTSOFT stresses the importance of the respect among people: "Among us we are very

respectful of the competences and responsibilities of the others. This is very important, respect is the basis to carry on a company in a proper way. So, even when we discuss, of course there may be different opinions, but then everyone presents his stance on the topic and eventually we always agree on the final decision. Because we respect each other and everyone recognizes the reasons of the other. Also, the decisions are always based on facts, for example on the market needs, so this also helps to make a decision everyone can agree upon".

For all these companies, with different degrees, the score on the assessment of firm success falls below the median (i.e. the cross-over point), showing that they perform worse than the other small companies in the sample.

Discussion and conclusion

On the basis of the results of the analysis, in this paragraph we will formulate some propositions regarding the resulting configurations and some other general observations which we think can represent an advancement in the existing literature.

First of all, we can observe that, consistently with our assumptions which have led us to use the fsQCA, several pathways exist leading to the firm success and to the lack of success. Thus, it does not exist a unique pathway which is always good but each firm can adopt a different combination of conditions taking into account also initial condition. The case of shared and distributed leadership is emblematic. From the interviews it emerges that a distributed leadership is often adopted when the co-leaders (which are often also co-founders) have a different background developed before the establishment of the firm. Once they start the business, it may be natural for each co-leader to assume a certain role within the leadership space which is consistent with his previous experiences and education. For example, a graduated in IT may "naturally" become the technical leader and a graduate in management the commercial and sales leader. This is consistent with Gronn's view of the distributed leadership as a "spontaneous collaboration": individuals with different abilities and skills pool their competences and this is the first step towards an ongoing collaboration (Gronn, 2002, p. 430). However, the competencies of the leaders are not always totally orthogonal, some overlappings may exist. For example, we interviewed several people with a bachelor in IT and with a master in business and administration. Having a common knowledge can help to have a better communication (Eisenhardt, 2007), in particular at the beginning. In these cases, co-leaders can be more prone to establish a shared leadership. The point is that establishing a shared or a distributed leadership both can be suitable options, as both can, under certain conditions, lead to the firm success. Another point that we want to stress is that the causal conditions work in combination, not in isolation. This means that assumptions like "a participative decision making always leads to the

firm success" can be misleading. In particular the analysis reveals a relationship between the opportunity of adopting a certain type of leadership structure and the degree of participation in decision making among leaders. Moreover, the results suggest that the success of the combination of a certain type of leadership structure combined with a certain degree of participation depends on the age and size of the firm. They also suggest that, in order to be successful, the firm should change and adapt the leadership structure and the participation in strategic decision making as the firm becomes larger and older.
Summarising we suggest the following proposition:

Proposition 1
Multiple configurations combining firm age, leadership structure and participation in decision making exist leading to the firm success or the lack of firm success.

Analyzing and comparing the configurations emerged from the analysis we can reach other interesting findings. First of all, speaking about the participation in decision making, we can observe that, while in micro and young firms a participative decision making appears to be decisive for the firm success (in both the configurations leading to the firm success DM appears as a core condition), in larger firms the participation in decision making appears to be less decisive: as a matter of fact, in the first configuration leading to the firm success in small firms the condition DM is irrelevant. This seems to contradict what suggested by Arendt and her colleagues, according to whom in small and young companies a CEO model (an autocratic decision making process) is more appropriate, while the TMT model (a group decision style) is more suitable in large and mature companies (Arendt et al., 2005). Moreover, these findings expand the view that a participative rather that a not participative decision making is always to be preferred. Participation in decision making has been seen as always positive (Stasser & Titus, 1987; Mumford & Gustafson, 1988; Edmondson, 1999; Latham et al., 1994; Phillips, 2001) or as negative, as it slows the decision making process (March and Olsen, 1976; Staw, Sandelands, and Dutton, 1981). Vroom and Yetton propose that the degree of the participation in decision making of subordinates should depend on some characteristics of the decision to be taken (Vroom and Yetton, 1973). Our research suggests that the participation in decision making should be analyzed within the organizational context it takes place in. In other words, we argue that considering at the same time multiple conditions, like firm age, firm size and the leadership structure, helps to understand which is the most feasible degree of participation in decision making among leaders.

Going back to the configurations found, we can observe that the conditions lack of age (i.e. the firm has to be young), co-leadership and participative decision making are closely tied together. This implies that co-leadership settings (both shared and distributed leadership) require a participative decision making in order to produce a positive outcome. We can notice it also confronting configuration 2 and 3 for the small firms: configuration 2, comprising a distributed leadership and a participative decision making in young small firms, leads to the firm success while configuration 3, which is identical expect for the fact that the decision making is not participative, leads to the lack of firm success. Instead, individual leadership works in small firms regardless the age of the firm and the degree of participation in decision making. So, the results suggest that adopting a participative decision making is not necessary to make individual leadership work.

Proposition 2

Co-leadership settings, both shared and distributed leadership, require a participative decision making to be successful.

Proposition 3

Individual leadership is successful in small firms regardless the degree of participation in decision making.

Speaking about the leadership structure, we can observe that while shared leadership leads to the firm success only in micro young firms, distributed leadership can lead to the firm success in young firms, regardless if they are micro or small. We can observe that both the co-leadership settings lead to the firm success only when the firm is young. This appear clearer comparing configuration 2 and 4 in small firms: we can observe that while configuration 2, comprising a distributed leadership and a participative decision making in young firms leads to the firm success, configuration 4, comprising a distributed leadership and a participative decision making, but in old firms, leads to the lack of firm success. That is, a small company that adopts a distributed leadership and a participative decision making, if it is young it is successful. But if it is not young anymore (the threshold here is 11 years), the same joint combination of distributed leadership and participative decision making does not work anymore and lead the company to the lack of success. This suggests that when a company is becoming old it should change its leadership setting and the participation in decision making. A possible solution for an old company is to establish an individual leadership.

In the previous literature different views coexist on the type of firms in which the establishment of a co-leadership setting is more likely and appropriate. According to some authors, shared leadership is suitable in entrepreneurial teams (Bryant, 2004; Pearce, 2004; Ensley at al., 2006; Carson et al.,

2007; Zhou et al., 2015; Zhou, 2016). Other authors argue that co-leadership settings are more appropriate in large organizations, characterized by complexity and diversity of roles or by situation like the need of a geographical expansion (Troiano, 1999; Alvarez and Svejenova, 2002; O'Toole at al., 2002; Arnone and Stumpf, 2010, Arena et al., 2011). We suggest that this discrepancy can be explained distinguishing between shared and distributed leadership. Co-CEOs settings, more studied in researches dealing with large companies, are more likely to be assimilated with the distributed leadership setting, rather than to shared leadership settings. Moreover, we suggest that multiple variables should be taken into account, like firm age, firm size and the participation in decision making among leaders.

The fact that we have found no configurations leading to the firm success comprising individual leadership in young and micro firms is surprising, considering the existing literature, which has so long emphasized the "heroic" role of the entrepreneur-leader (e.g. Anderson and Warren, 2011). On the other hand, previous literature also pointed out the difficulties in establishing co-leadership arrangements in particular at the foundation of the company, due to the fact that these settings need professional maturity and individual integrity to be adopted successfully (Reid and Karambayya, 2009, 2015; Gibeau et al., 2016). On the opposite, we argue that co-leadership is common in young firms, as most startups are founded by entrepreneurial teams, rather than single individuals. At the beginning, a co-leadership, accompanied by a participative decision making, can be necessary because the entrepreneurial activity is often too complex to be carried out by an individual alone and so the contribution of more co-leaders is needed, both in the leadership activity and in strategic decision making. Moreover the commitment of the founders is essential and a sole leader can lack the necessary legitimacy at the beginning of the company course. As the time goes by, things change. The commitment of co-founders is taken for granted and an individual leadership may more easily emerge, because of the personality of the leader or because the other co-founders and managers are willing to delegate the power. The leadership of a sole leader had the time to consolidate and to gain the necessary legitimacy. The running of the company is more tested, the leadership activity is less characterized by the ambiguity and creativity of the early stage so the contribution of more people is less necessary and therefore some responsibilities can be delegated to a single person. If the company's aging has also been accompanied by its growth in terms of company size, with the increase of company complexity there is an increased need for someone who takes the final responsibility of coordinated actions.

We can summarize the findings on leadership structure in the following propositions:

Proposition 4

A shared leadership can lead to the firm success in micro young firms (when accompanied by a participative decision making).

Proposition 5

A distributed leadership can lead to the firm success in young firms, both micro and small ones (when accompanied by a participative decision making).

Proposition 6

An individual leadership can lead to the firm success in small firms, regardless the firm age (and the degree of participation in decision making). In micro firms, individual leadership is not associated to the firm success.

Speaking about the fifth proposition we can however observe that the coverage of the solution for micro firm is quite low. This means that other pathways, even including an individual leadership, may exist, leading to the firm success in micro firms. Moreover, we have to specify that in small firms the adoption of an individual leadership is one of the pathways, not the only one, leading to the firm success. As a matter of fact, also adopting a distributed leadership, accompanied by a participative decision making, can lead to the firm success, if the firm is small and young.

Finally, this analysis shows the importance of the variable age. While previous literature on the growth of the firm has considered age and size as going necessarily together, our research points out that some changes can or should occur in the leadership structure and in the participation in decision making due to the change in the age of the firm, not in its size. In other papers, the age of the firm is considered but without taking into account the firm size (e.g. Van Geenhuizen and Soetanto, 2009). We argue that both dimensions have to be considered simultaneously, to have a clearer picture of the firm. This allows a more nuanced vision of the growth of the firm. In our perspective, the growth of the firm is not deterministic as described in most of the models on development stages of the firm. As a matter of fact, a company can become old remaining a micro firm or on the opposite it can be very young and at the same time be already large. To understand what really happens within firms, scholars should take into consideration all these different possibilities and propose insights for each of the combination of firm size and firm age, like in Table 6.

Table 5. Suggested leadership structures and degree of participation in decision making according to firm age and size

		Firm age
	Young and micro Shared or distributed leadership + participative decision making	*Old and micro* No configuration leading to the firm success found
Firm size	*Young and small* Distributed leadership + participative decision making	*Old and small* Individual leadership

In conclusion, we present the contributions of this research to the existing literature. First of all we provide insights on the conditions under which an individual leadership or a co-leadership setting can lead to the firm success, distinguishing between shared and distributed leadership. Furthermore, we present a configurational model which brings together conditions whose interdependencies and causal complexity have not been analyzed in existing literature. In particular, for the first time we connect the participation in decision making among leaders with firm size and age and we analyze its joint role with leadership structure in determining firm success. This research also sheds new light on the mechanisms which lead to the success of micro and small firms.

Finally, we argue that in order to obtain a more nuanced vision of the growth of the firm, firm age and size should be considered simultaneously.

Speaking about the managerial contributions, the configurational model proposed here can help entrepreneurs and managers in understanding which are the leadership structure and degree of participation in decision making among leaders which best fit their company.

Limitations and future research

We are aware that this research has some limitations. First, an aspect which can limit the generalizability of the results is that all the companies interviewed operate in the software development industry. That was a precise choice, because we wanted to consider an homogenous sample with regard to the firms' industry, in order to be able to compare the success among firms. However, this could make our results hardly applicable to other industries. For example, in more traditional industries the individual leadership might be more common and more suitable also in young age, because in these industries the activities are more structured and less characterized by the need of creativity and interdependence, which are some of the factors which are associated with

the establishment of a plural form of leadership (Pearce, 2004; Carson et al., 2007). We believe that a comparison between different industries (for example high tech vs traditional ones) could represents a fascinating topic for future research. We argue that also the innovativeness of the company, which has not been considered in this study, could be considered as an outcome variable linked with the leadership structure and the participation to decision making among leaders. The participation in decision making has been found to stimulate team innovation (De Dreu and West, 2001). Moreover, the leadership style affects the effective innovation in new technology-based firms (O'Regan and Ghobadian, 2006) and we could expect that also differences in the leadership structure may have an impact on innovation. We suggest that the analysis of the interplay between the leadership structure and the participation in decision making in determining the firm innovativeness would represent an intriguing future research development, as previous literature analyzed their effect separately.

Another limitation of our study is that we didn't analyze the cultural and institutional differences among the companies of our sample, neither the network they are inserted in. The importance of the context has been highlighted both in studies on decision making (Carpenter and Westphal, 2001; Klijn, 2001; Vitell et al., 1993; Briley et al., 2000) and in studies on leadership (Cooper and Brady, 1981; Hambrick and Cannella, 2004; House et al, 2004; Balkundi and Kilduff, 2006; Mehra et al., 2006). Its role has been studied also in relation to the growth of the firm (Dileo and Pereiro, 2018). A deeper investigation on the role of the cultural, institutional or network context, which is beyond the aim of this research, would represent another interesting future research development.

A further limitation of our research is represented by the fact that we didn't find any configuration for the micro and old firms, neither leading to the firm success nor to the lack success, even if several firm in the sample belong to this category (one configuration for the lack of success was found but the coverage is too low). This could be a limitation of our study but could also be due to some distinctive features of this category of firms. For example, according to Churchill and Lewis, when a company has already achieved enough economic wealth and a good market penetration, it could decide not to invest in growth and to just maintain its market niche (Churchill and Lewis, 1983). According to other studies, a company is considered successful if it grows fast (the rate of growth is also often used to assess the firm performance or success), thus, if after years the firm is still micro this could suggest that the company is unsuccessful. What we want to suggest is that maybe this category of firms would deserve a closer look, or the development of a new, ad hoc, model.

Finally, in this paper we adopted a configuration approach, linking the firm age, size, leadership structure and participation to the decision making among leaders to the firm success. Another

possibility is to carry out a longitudinal study on the evolution of these conditions with the growth of the firm.

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