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A configurational analysis of the antecedents of entrepreneurial orientation

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ABSTRACT

Entrepreneurial orientation is widely acknowledged as a strong predictor of firm performance. It is therefore critical to understand the factors and conditions that nurture it. In this paper, we investigate what configurations of motivations and personality traits trigger entrepreneurial orientation in three strategic leadership situations: successor of a family business, family-oriented founder, non-family founder. Strategic leaders in these situations are differently exposed to the opportunities and constraints to pursue entrepreneurial posture, because of the influence of family embeddedness and organizational resistance. We apply Fuzzy Set Qualitative Comparative Analysis to a sample of 257 Italian SME owner/managers. We identify 12 coherent configurations of internal and external motivations, and personality traits that are all conducive to entrepreneurial orientation. These configurations are consistent with features of the family and organization environments in which the entrepreneurial action takes place; furthermore, in each strategic leadership situation, different configurations of attributes lead to entrepreneurial orientation.

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1. Introduction

Since the seminal work by Miller (1983), entrepreneurial orientation (EO), namely an organization's decision making practices, managerial philosophies and strategic behaviors that are inherently entrepreneurial (Ireland, Covin, & Kuratko, 2009), has become one of the most investigated constructs in the field of entrepreneurship (Wales, Monsen, & McKelvie, 2011). In particular, EO has been systematically shown to influence performance along various dimensions, both financial and non-financial (for a review, see Rauch, Wiklund, Lumpkin, & Frese, 2009).

Entrepreneurial orientation is a construct observed at organizational level and refers to the behaviors (innovativeness and proactiveness) and attitudes (risk-taking) of its managers and employees (Covin & Slevin, 1991; Rutherford & Holt, 2007). However, what influences those behaviors and attitudes is still an understudied phenomenon. As argued by Wales (2016): “[F]actors which explain the organizational genesis or sustenance of EO remain an important area of research” (p.9).

Extant research on the topic mainly assesses the role of organizational processes, human resource management systems and managerial practices as antecedents of EO, whereas individual-level determinants are largely overlooked (Messersmith & Wales, 2013). In particular, despite the well-recognized centrality of organizational leaders in determining company level processes and outcomes (e.g. Daily, McDougall, Covin, & Dalton, 2002; Hambrick & Mason, 1984; Simsek, Fox & Heavey, 2015), the literature is still scarce regarding the role of leaders' characteristics in shaping the entrepreneurial posture of an organization (e.g. Boling, Pieper, & Covin, 2015; Sciascia, Mazzola, & Chirico, 2013; Simsek, Heavey & Veiga, 2010).

The present work contributes to filling this gap by focusing on the influence of the leader's psychological features (personality traits and motivations) on EO within small and medium enterprises (SMEs). The context of SMEs is especially relevant for our topic, as in these companies, leaders' influence is likely to be more pronounced, given the overlap between ownership, management and entrepreneurial roles and the lower structural constraints to executive action (Daily & Dalton, 1992; Daily et al., 2002; Finkelstein & Hambrick, 1996).

We interpret the impact of leaders' profiles on organizational EO in light of the imprinting framework (Marquis & Tilcsik, 2013;

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Simsek, Fox et al., 2015). Imprinting is a process whereby the characteristics of a focal entity (imprinted) are shaped by prominent features and actions of a source (imprinter), and these characteristics continue to persist despite significant environmental changes in subsequent periods (Marquis & Tilcsik, 2013; Stinchcombe, 1965). Entrepreneurs are a decisive source of imprinting for the organizations they lead. For example, research suggests that the organizational patterns set by a founder have persistent effects on a wide array of outcomes even after the founder leaves the firm (e.g. Baron, Hannan, & Burton, 1999).

In this work, the personal characteristics of individual entrepreneurs that generate the EO imprint are evaluated by adopting a configurational perspective. Most of previous research on entrepreneurs' psychological features, examines the "separate" effect of each attribute, such as specific traits of personality (e.g. Caliendo & Kritikos, 2012). By adopting a configurational perspective, in this work we follow the suggestion of many (see e.g. Gartner, 2010) according to whom studies on entrepreneurship should aim instead at showing varieties of profiles whereby characteristics, relevant personality traits and motivational features may combine also in synergistic or substitutive ways and interact with the social context where the entrepreneur is embedded.

In particular, we consider the family business background as a prominent feature of entrepreneur's social context, given the importance of family ties in influencing the entrepreneurial experience (Aldrich & Cliff, 2003; Arregle, Batjargal, Hitt, Webb, & Tsui, 2013; Miller, Le Breton-Miller, & Lester, 2011), and we differentiate between three types of entrepreneurs, namely non-family business founders (with no intention to establish a family business), family business founders and family business successors.

The analysis is carried out on an original dataset of 257 entrepreneurs operating in Italy. Consistently with our goal of identifying configurations of characteristics, we adopt fuzzy-set Qualitative Comparative Analysis (fsQCA) (Ragin, 2000; 2008) as methodological approach. The use of fsQCA in business research has been advocated because it permits a more thorough understanding of the causal relations between configurations of organizational factors and outcomes, compared to inferential statistics. Importantly, this method allows for equifinality, i.e. for the possibility that different causal paths produce the same outcome (Woodside, 2013).

Our study primarily addresses the important gap in the research on the antecedents of EO (Wales, 2016), which is less abundant compared to the study of performance consequences of EO, and so far has devoted limited attention to the role of personality and motivational variables (e.g.; Di Zhang & Bruning, 2011; Simsek, Heavey, & Veiga, 2010). By adopting the configurational approach enabled by the use of fsQCA, our analysis also captures the synergy among various elements in internally consistent and equifinal entrepreneurial profiles (Doty, Glick, & Huber, 1993; Grandori & Furnari, 2009) leading to EO as an organizational outcome. Furthermore, we contend that these bundles of attributes, in order to produce high EO, need to vary across the leadership situations, whereas scholarship on entrepreneurial personality seeks features that are universally valid across individuals (Zhao, Seibert, & Lumpkin, 2010).

Moreover, our results contribute to the stream of organizational research on imprinting (Simsek, Fox et al. 2015) by uncovering the interplay of various individual-level and contextual features in the processes of genesis and metamorphosis of organizational imprints.

The article is structured as follows. In section 2 we outline the relevant arguments on the linkage between leaders' attributes and EO in different contextual situations, and we develop a series of research propositions; section 3 presents the research design and

the analytical method; in section 4 we discuss the results; section 5 concludes, highlighting contributions, limitations and possible developments of the study.

2. Entrepreneurial orientation and leaders' imprinting

The literature on EO has developed building on two different conceptualizations of the construct (Covin & Wales, 2012). The one originally proposed by Miller (1983) and later embraced by Covin and Slevin (1989) recognizes EO as "a basic, unidimensional strategic orientation" (Covin & Slevin, 1989, p. 79) that becomes manifest in the concurrent presence of three components, namely two behavioral (innovativeness and proactiveness) and one attitudinal (risk taking). Specifically, innovativeness is the tendency to support creative processes that may result in new products, services, or technologies; proactiveness reflects the attitude towards the continuous pursuit of new opportunities; whereas risk-taking propensity refers to the willingness to make investments and resource commitments with uncertain returns. The second perspective proposed by Lumpkin and Dess (1996), is multidimensional, as it does not require the simultaneous occurrence of the various components (Covin & Wales, 2012), and introduces two additional factors, i.e. competitive aggressiveness and autonomy, that refer respectively to the propensity to directly and intensely challenge competitors to outperform industry rivals in the marketplace, and to the capacity to be self-directed in the pursuit of opportunities.

Despite the difference in the specification of the construct, both conceptualizations share the general idea that EO reflects "the organizational processes, methods and styles that firms use to act entrepreneurially" (Lumpkin & Dess, 1996, p. 139). For this reason EO can be interpreted as one of the main outcomes of leaders' imprinting in entrepreneurial firms (Baron & Hannan, 2002; Leung, Foo, & Chaturvedi, 2013) not only by defining processes and structures but also influencing employees behaviors and attitudes. This is mainly because organizational leaders, and in particular individual founders, shape the organization around their business idea, perform coordination and decision making through direct supervision and personal communication, and are not subject to the mediation and constraint of formal systems and bureaucratic structures (Daily, 2002; Feltham, Feltham, & Barnett, 2005; Lechner & Gudmundsson, 2014; Lubatkin, Simsek, Ling, & Veiga, 2006). As a consequence, they play a critical role in setting the initial structure, strategy and culture of an organization (e.g. Dobrev & Gotsopoulos, 2010; Judge et al., 2015). These elements are crucial in setting the entrepreneurial posture of a firm (Fiol & Lyles, 1985; Miles & Snow, 1978; Miller & Friesen, 1978) and might persist in their initial form as a long lasting trait of the organization, thanks to the institutionalization of the founder's imprint (Marquis & Tilcsik, 2013; Schein, 1983).

To develop our research propositions, then, we build on the basic assumption that EO, as an imprint of the leader on the organization, results from certain individual characteristics representing the distinctive traits of entrepreneurial personality and motivation.

2.1. Motivational and personality pathways to EO

Previous research on individual psychological traits associated to entrepreneurship especially focuses on the critical role of some determinants that can be grouped in Caliendo and Kritikos (2012); Carsrud and Brännback (2011); Shane, Locke and Collins (2003): (1) intrinsic motivation; (2) extrinsic motivation; (3) personality traits.

Intrinsic motivation refers to a personal interest in the entrepreneurial task (Carsrud & Brännback, 2011). The literature

identifies three main drivers of intrinsic motivation: need-for-achievement, need-for-independence and emotional attachment to the business. Need-for-achievement refers to a motivational pattern associated to the accomplishment of challenging goals, to the mastery of skills and to the subjective feeling of having learned (McClelland, 1961). In individuals with high need-for-achievement, success in challenging tasks positively reinforces self-efficacy and leads to self-fulfillment. Need-for-independence refers to the desire to determine one's own goals and the choice of jobs that provide discretion in the definition of methods, timing, and evaluation criteria (Breugh, 1999). Emotional attachment to the business refers to the value associated to the non financial benefit of owing the firm (Zellweger & Astrachan, 2008) and encompasses the desire of maintaining the control of a family business as a form of loyalty to the family (Madison, Runyan, & Swinney, 2014). The literature has also found that need-for-achievement and need-for-independence, individually considered, are positively associated with EO, while emotional attachment may be found in more conservative strategic postures (Brandstätter, 2011; Carter, Gartner, Shaver, & Gatewood, 2003; Croson & Minniti, 2012).

Extrinsic motivation refers to an external reward, in tangible or intangible form, that is a consequence of entrepreneurial behavior. Material needs and social expectations have been proven to be the most relevant drivers of extrinsic motivation. Material needs refer to the desire to earn money from the business, with all the associated benefits in terms of wealth and status (Carsrud & Brännback, 2011). Social expectations refer to the fact that the strategic leader pursues goals to the entrepreneurial action that are set by other actors, and concern e.g. the desire of individuals expectations of some partitions of the society and/or of their family (Krueger, Reilly, & Carsrud, 2000). Lumpkin, Martin, and Vaughn (2008) for example emphasize the role of loyalty to family as a driver of entrepreneurial action.

Finally, two personality traits have been especially related to entrepreneurial behavior: (1) internal Locus of Control (LOC) (e.g. Brockhaus, 1980; Lee & Tsang, 2001); (2) tolerance for ambiguity (Begley & Boyd, 1987). An internal LOC is found in individuals who believe that their actions affect outcomes (Cromie, 2000). Successful entrepreneurs have been shown to have internal LOC—that is, they believe that they, not their environments, control their destinies (Miller, 2015). Tolerance for ambiguity refers to propensity of individuals to view situations without clear outcomes as attractive rather than threatening. Entrepreneurs may be energized by uncertainty as they see the diverse opportunities of a dynamic environment (Begley & Boyd, 1987; Budner, 1982).

Despite the considerable amount of research on the influence of these factors on entrepreneurial behavior, the attempts to define a universal “psychological profile” of the entrepreneur have led to non-conclusive evidence (Brandstätter, 2011; Korunka, Frank, Lueger, & Mugler, 2003; Shane et al., 2003). Recent contributions suggest this may be due to the fact that differences in entrepreneurs' motivations and personality traits largely outnumber similarities among them; therefore, an approach aimed at identifying an array of single personal attributes that distinguish between different entrepreneurial types is unsuitable to capture the complexity of the phenomenon (Gartner, 2010). One possible way to deal with this issue is the configurational approach to personality. This approach suggests that personality traits *in combination* influence individual behavior (e.g. Shoss & Witt, 2013), and therefore the influence of each personality factor should always be considered in interaction to other factors. As a consequence, different combinations of factors could lead to the same outcome. For example, both low and high levels of tolerance to ambiguity might be associated to an entrepreneurial profile, depending on how an individual scores on other personality dimensions.

The configurational argument may also apply to psychological traits conducive to EO through an imprinting mechanism. We expect that multiple possible pathways originating from the combination of individual characteristics lead to an entrepreneurial strategic posture at the organizational level. The psychological traits create the EO imprint in combination with the social context and the organizational conditions surrounding the entrepreneurial action (Korunka et al., 2003). As suggested by Busenitz, Plummer, Klotz, Shahzad, and Rhoads (2014), entrepreneurship can be properly understood as a contextual phenomenon in the sense that it unfolds at the intersection between environments, organizational settings, social ties and opportunities.

Therefore, our baseline research proposition postulates the existence of different and equifinal pathways to EO and reads as follows:

Proposition 1. *There are multiple combinations of entrepreneurs' psychological traits and contextual factors that lead to high levels of entrepreneurial orientation.*

2.2. Founders' motivational and personality pathways to EO

Founders are able to create and shape the organization according to their own intuition, vision and strategy and create a persistent imprint along all the stages of the firm life cycle by virtue of their superior firm-specific knowledge, greater commitment, and high reputation among their collaborators (Cruz & Nordqvist, 2012; Kelly, Athanassiou, & Crittenden, 2000; Schein, 1983). As a matter of fact, studies have singled out the differences between founder-led and non-founder led firms in term of governance, decision-making process, top management team, and strategy (Mousa & Wales, 2012; Nelson, 2003), and showed that the impact of the founder is prominent, particularly in smaller firms (Jayaraman, Khorana, Nelling, & Covin, 2000). Being less constrained by existing organizational routines, founders exhibit original problem solving styles, have more freedom to proactively experiment their business ideas and shape company's EO according to their personality, priorities and values (Begley, 1995; Randøy & Goel, 2003).

However, not all founders are the same. A key source of differentiation among them arises from the impact of the family context (Arregle et al., 2013; Simsek, Fox et al. 2015). The family embeddedness perspective suggests that the cognitive, normative and political stimuli of the family context influence business decision-making. This can happen in three ways (Miller, Minichilli, & Corbetta, 2013; Miller et al., 2011): (1) through cognitive frames consisting in shared perspectives and scripts for interpreting the world: “family loyalty” and “family reputation” are examples of such frames; (2) through normative imperatives, to the extent that intimacy and sense of responsibility engender altruistic behaviors towards other family members and encourage the pursuit of non-economic goals; (3) through political pressures, when family members try to impose their own agendas to the business leader (Miller et al., 2013). As a result, family ties may lead to positive (family as a vehicle to foster innovation and venturing) or negative (entrenchment, conservative strategies, barriers to growth) consequences in terms of founders' behaviors and actions (Simsek, Fox et al. 2015; Aldrich & Cliff, 2003; Casillas, Moreno, & Barbero, 2010; Madison et al., 2014; Naldi, Nordqvist, Sjöberg, & Wiklund, 2007; Chirico, Sirmon, Sciascia, & Mazzola, 2011).

According to the definition provided by Litz (1995), an entrepreneur can be considered a family business founder (FB founder) when he/she strives to achieve and maintain an intra-organizational family-based relatedness, through the involvement of other members of the family in the company ownership and

management, and/or through the intention to continue the business across family generations. These conditions will give the leader a long-term outlook in the development of company's strategic orientation. At the same time, however, the founder will face social pressures from the family context as he/she will be expected to address the priorities of the family (Chrisman, Chua, Pearson, & Barnett, 2012). In this sense, family business founders will pursue business success as a means to fulfill the needs of family members and seek for opportunities that may assure long-term growth of the firm.

On the other hand, founders who do not act in a family business context (non-FB founders) are much less constrained in their business-related decision making process by the interaction with strong family ties. This would broaden the scope of the entrepreneurial search process in terms of identification of opportunities and mobilization of resources (Arregle et al., 2013). Moreover, the EO imprint will arise almost exclusively from the individual motivation and personality attributes that are at the basis of the founding decision. This will result in more "degrees of freedom" in the psychological profiles leading to EO.

We summarize the above considerations regarding the two types of founders in the following propositions:

Proposition 2. *Among FB founders, the motivational and personality pathways leading to EO are consistent with the needs to: (1) ensure firm's intergenerational continuity and (2) handle with the cognitive, normative and political influences of the family context.*

Proposition 3. *Among non-FB founders, the motivational and personality pathways leading to EO are less constrained by family-based and intergenerational concerns in comparison to FB founders.*

2.3. Successors' motivational and personality pathways to EO

If the entrepreneur is a successor, he/she might need to re-start a process of organizational imprinting in order to transform or renew the firm's strategic posture. According to the imprinting theory, core features that have been shaped by past strategic leaders, and especially by the founders, notably constrain an organization's ability to change (Judge et al., 2015; Marquis & Tilcsik, 2013). In particular, founders' imprinting perpetuates strong company's internal characteristics, despite the external conditions may have changed.

Thus, the successor faces the alternative between conforming to the existing imprint and introducing a process of metamorphosis to support his/her original entrepreneurial vision (Simsek, Fox et al., 2015). In either case, the route to EO tends to be narrower compared to the founder's one, given the constraints arising from an already established business system of structures and relationships.

Typically, successors have been embedded in both the family and firm environment for a large part of their life, and thus have had the possibility to absorb role models, cognitive frames and heuristics from those environments. To offer a new vision to the firm, they need to unlearn taken-for-granted managerial and decision-making styles; they also have to gain recognition as the "new leaders" from the members of the organization, who, arguably, are still bounded to their predecessor.

Also, in firms led by a successor, decision making becomes less centralized and personalized, with lower possibility for the strategic leader to translate his/her own personality into organizational features (Carney, 2005; Kelly et al., 2000). As observed by Cruz and Nordqvist (2012), successors must deal with the "founder's shadow" (Davis & Harveston, 1999) and at the same time they must find new ways to revitalize the business they have inherited (Hoy,

2006; Kellermanns & Eddleston, 2006). This often implies the need to put higher emphasis on the opportunities of growth arising in the external environment, in partial opposition to the strong emphasis on the internal culture which is typical of the founding generation (Cruz & Nordqvist, 2012).

The successor's personality and motivations need also to be consistent with the necessity to overcome family firm's inertial forces (Covin & Slevin, 1991; Covin, 1991; Sciascia et al., 2013) and conservation strategies (Cabrera-Suárez, De Saá-Pérez, & García-Almeida, 2001; Miller et al., 2011). The involvement of multiple generations, which is common in successor-led firms may enhance the process of discovery and exploitation of entrepreneurial opportunities but it is also associated with the possibility of inertia and conflict (Chirico, Ireland, & Sirmon, 2011; Chirico, Sirmon et al., 2011), as the variety of goals that family firms pursue complicates the definition of a straightforward strategies (Kotlar & De Massis, 2013).

We therefore argue that:

Proposition 4. *Among FB successors the motivational and personality pathways leading to EO are consistent with the needs to: (1) transform the previous leader's imprint and (2) overcome the inertial forces arising from the multigenerational family context.*

3. Research design

3.1. Sample

The analysis was carried out on an original dataset that was built within a national project funded by the Italian Ministry of Education and Research aiming at exploring individual characteristics and motivations of entrepreneurs.

The initial sample was made up of 1455 organizational leaders (CEOs or equivalent, who owned a stake in the firm) of firms with less than 250 employees; the response rate was about 17.66%, leaving a final sample of 257 cases. The response rate is comparable to several studies on EO in SMEs (e.g. Abebe & Angriawan, 2014). Our initial sample was representative of the national population of entrepreneurs in small to medium manufacturing firms with respect to the firm size, gender, age and industry (classified by technological intensity according to the OECD – Eurostat categorization). The reference data at the population level are drawn from the census data collected by the Italian institute of statistics (ISTAT). Representativeness is ensured also in our final sample, as Chi-square statistics does not reveal significant differences between the initial and final sample in the distribution of each of the mentioned variables. We also checked for the existence of non-respondent bias by comparing early and late respondents to the survey and checking whether they differ in a number of key variables of our analysis. ANOVA tests revealed that there were no significant differences between the two groups.

195 respondents (75.9%) are males, and their average age is about 52.7 years. Regarding the company-level characteristics, all firms operate in low- to medium-technology manufacturing sectors. The number of employees ranges from 1 to 242, with an average of 26.4. Sales turnover ranges from 1.2 to 34.5 million Euros, with an average of 8.74 million.

Data were collected in the period July–September 2012 through phone interviews, by means of a structured questionnaire. The questions investigated motivations, aspirations and cognitions of the strategic leaders, their educational background and family status at the time of start-up or at the moment of entering the family business, the features of the present entrepreneurial activity, and the entrepreneurs' self-assessment of the dimensions of EO at the organizational level.

A preliminary draft of the questionnaire was fine-tuned through a series of discussions on methodological issues with a pool of scholars in the field of entrepreneurship, and then based on the results of a pilot study with selected informants. As our data have been collected at the same point in time, from the same respondent, and using the same medium, common method bias could be a concern for reliability of our results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To limit this bias, we designed the instrument in a way that questions on the strategic posture, motivations, and traits were separate, so that respondents were not aware of the conceptual framework; we phrased the questions in a precise and unambiguous manner, and employed different scale formats and anchors; furthermore, we encouraged respondents to provide honest answers, assuring that no “right” or “wrong” answer exist, and guaranteed their anonymity.

3.2. Outcome and determinants

The *outcome variable* of our study is *Entrepreneurial Orientation (EO)*. The measurement of entrepreneurial orientation is a matter of debate among scholars, who have been adopting a variety of ontological and epistemological perspectives – concerning especially the dimensionality of the concept, its nature as an attitudinal or behavioral construct, the covariation of its dimensions, and the reliance on formative vs. reflective models for its measurement (Anderson, Kreiser, Kuratko, Hornsby, & Eshima, 2015; Covin & Wales, 2012; George, 2011). There are basically two distinct measures of EO: (1) the unidimensional one, proposed by Miller (1983) and later operationalized by Covin and Slevin (1989), according to which EO becomes manifest in three dimensions of innovativeness, risk taking and proactiveness; empirically, the three dimensions assume simultaneously high values in entrepreneurially oriented firms; (2) the multidimensional one, proposed by Lumpkin and Dess (1996), which includes two additional components i.e. competitive aggressiveness and autonomy, and is based on the idea that any of the components, independently or combination with others may lead firms to assume an entrepreneurial posture. For the purpose of this study, we adopted the 9-item scale proposed by Covin and Slevin (1989) that examines the three dimensions of innovativeness, risk taking and proactiveness, consistently with the unidimensional conceptualization of EO. We choose this measure as we are more interested in capturing EO as a phenomenon – “what EO looks like” according to Covin and Wales (2012). The use of Covin and Slevin’s scale also ensures high levels of comparability with previous research, as it has been employed in several studies on the topic (Rauch et al., 2009).

The items for innovativeness, risk taking and proactiveness were rated on a 5-point Likert scale; EO is calculated as the average of the scores along these three dimensions. Reliability analysis of the construct on our data returned a Cronbach alpha value of 0.88.

The *determinants* are various attributes of personality and motivation; each component is a multi-item construct drawn from previous studies on entrepreneurial profiles. For what concerns *intrinsic motivations*, we measured *Need-for-achievement* by using the scales developed respectively by Eisenberger, Jones, Stinglhamber, Shanock, and Randall (2005) and Jayawarna, Rouse, and Kitching (2011); *Need-for-independence* with the scales by Carter et al. (2003) and Kuratko, Hornsby, and Naffziger (1997); and *Emotional attachment to the business* relying on the works by Carland, Hoy, Boulton, and Carland (1984) and Madison et al. (2014). Concerning the extrinsic motivations, we considered *Material needs* – based on the scales developed by Carter et al. (2003), Cassar (2007) and Dubini (1989), and *Social expectations* (Shane, Kolvereid, & Westhead, 1991). Finally, we considered two personality traits and attitudes: *Internal Locus of Control (LOC)* (Zellweger,

Sieger, & Halter, 2011) and *Tolerance for ambiguity* (Acedo & Jones, 2007). In the Appendix we report the original items of the scales (that have been translated into Italian in our survey), and their Cronbach alpha values.

The contextual conditions are captured by the different status of the leader, which corresponds to different organizational and social settings surrounding the entrepreneurial effort. In particular, we differentiated between FB founders, non-FB founders and FB successors. As the target of our analysis is the organizational leader, i.e. the key decision maker that has the power to determine the strategic posture of the firm, we operationalized this definition by identifying the largest active individual shareholder in the company (Simsek, Fox et al., 2015; Simsek, Jansen, Minichilli, & Escriba-Esteve, 2015).

We discriminated between the different founders by considering the answer to the question: “Do you plan to leave your company in the future to a member of your family?” (Chua, Chrisman, & Sharma, 1999). The group of FB-successors is composed of strategic leaders who have acquired the ownership and control of the firm from a family member. The three types of entrepreneurs account respectively for 81, 53 and 123 cases.

Finally, we include as further contextual determinants *company size* (number of employees) and *age* (years from the establishment), as they have been proven to affect the degree of EO at the organizational level, due to the fact that formalization increases as organizations grow and age (Hannan, Carroll, Dobrev, & Han, 1998) and this tends to hinder entrepreneurial attitudes (e.g. Dobrev & Barnett, 2005).

Descriptive statistics and correlations among the study variables are reported in Tables 1 and 2. Table 1 reports also the key descriptive statistics for each group of leaders.

3.3. Method

To identify the configurations of motivations conducive to high EO, we employed fsQCA (fuzzy set Qualitative Comparative Analysis), a set-theoretic approach that aims at assessing how different combinations of conditions (otherwise referred to as “causal recipes”) cause a specific outcome (Ragin, 2000; 2008). The use of this technique, usually limited to the field of political science (for a review see Rihoux & Marx, 2013), is quickly becoming widespread also in the management and organization fields for its effectiveness in studying configurations and complex causality (see e.g., Aversa, Furnari, & Haefliger, 2015; Fiss, 2011; Grandori & Furnari, 2008; García Castro, Aguilera, & Ariño, 2013; Ganter & Hecker, 2014; Soda & Furnari, 2012), so much so that the Academy of Management Conference in the past few years has included a track specifically dedicated to studies based on fsQCA.

This technique differs from conventional inferential statistics because it allows equifinality and asymmetric relationships between outcomes and conditions, and is suitable to analyze small-number samples. Furthermore, it provides information on the interplay among the causal conditions included in a configuration, by relying on Boolean algebra; this contrasts with inferential statistics that appreciates the effect of a determinant in isolation from the others. These strengths make fsQCA effectively employed in the analysis of configurations and preferable to other techniques such as e.g. structural equations or cluster analysis (e.g. Aversa et al., 2015; Fiss, 2007; Judge et al., 2015; Woodside, 2013).

The first step of the method is “data calibration” consisting in the translation of all conditions into sets. In fuzzy sets the degree of membership is specified along the continuous range from 0 (complete non-membership) to 1 (full membership). For example, if we take the condition “need for achievement”, each case will exhibit a range of membership from 0 to 1 in the set of individuals with high

Table 1
Descriptive statistics according to the three groups of organizational leaders.

Variable	Total		FB founder		Non-FB founder		FB-successor	
	Mean (S.D.)	Min–Max	Mean (S.D.)	Min–Max	Mean (S.D.)	Min–Max	Mean (S.D.)	Min–Max
1. Entrepreneurial orientation	2.90 (0.55)	1–4	2.96 (0.57)	1–3.8	3.00 (0.48)	2–4	2.82 (0.56)	1.4–4
2. Need-for-achievement	3.54 (1.01)	1–5	3.61 (1.03)	1–5	3.64 (1.01)	1–5	3.45 (0.99)	1–5
3. Need-for-independence	2.99 (1.25)	1–5	3.08 (1.27)	1–5	3.14 (1.24)	1–5	2.87 (1.24)	1–5
4. Emotional attachment	2.82 (0.98)	1–5	3.07 (0.93)	1–5	2.61 (0.98)	1–4.67	2.73 (0.98)	1–5
5. Material needs	4.56 (1.57)	1.5–7.5	4.92 (1.52)	1.5–7.5	4.51 (1.70)	1.5–7.5	4.35 (1.50)	1.5–7.5
6. Social expectations	2.93 (1.41)	1–5	2.16 (1.29)	1–5	2.02 (1.23)	1–5	3.80 (0.96)	1–5
7. Internal LOC	3.66 (1.09)	1–5	3.73 (1.02)	1–5	3.66 (1.01)	1–5	3.62 (1.17)	1–5
8. Tolerance for ambiguity	4.89 (1.40)	1.33–6.77	5.23 (1.04)	2.33–6.67	4.73 (1.16)	2–6.67	4.74 (1.15)	1.33–6.77
9. Company size	26.40 (29)	1–242	31.35 (39.26)	1–242	23.04 (19.15)	3–99	24.59 (24)	1–171
10. Company age	21 (11.6)	1–49	25.52 (11.88)	1–49	20.38 (10.41)	1–44	18.29 (11)	1–48

Table 2
Correlations among study variables.

Variable	1	2	3	4	5	6	7	8	9	10
1. Entrepreneurial orientation	1									
2. Need-for-achievement	0.23	1								
3. Need-for-independence	0.04	0.23	1							
4. Emotional attachment	0.09	0.19	0.05	1						
5. Material needs	0.01	0.36	0.33	0.26	1					
6. Social expectations	–0.23	0.09	0.01	0.10	0.09	1				
7. Internal LOC	0.12	0.16	0.07	0.01	0.08	–0.02	1			
8. Tolerance for ambiguity	0.21	0.43	0.09	0.38	0.27	–0.01	0.13	1		
9. Company Size	0.05	0.04	0.06	0.08	0.09	0.02	0.16	0.03	1	
10. Company age	0.22	–0.09	–0.08	0.19	0.01	–0.23	–0.06	0.08	0.12	1

Correlation coefficients with absolute value higher than 0.15 are significant at 5% level.

levels of need for achievement.

The calibration process requires identifying thresholds indicating the degree of membership. In the case of binary variables, we attributed full membership to the cases that presented the attribute of interest, and complete non-membership to those in which the condition was absent. We used the distribution of frequency to calibrate the continuous conditions, as shown in Table 3.

We chose to calibrate the data in this way, by attributing full membership only to those cases that present extremely high values of the outcome and determinants, with the aim of identifying some sort of “extremes configurations”, and because of the large number of conditions that would have produced several numbers of configurations otherwise.

Next, we built three data matrices, one for each leadership situation, reporting all the possible combinations of values of the causal conditions associated with high levels of the outcome variable (i.e. high degrees of EO). These data matrices are known also as “truth tables”. Each “truth table” has 2^9 rows, where 9 is the number of causal conditions used in the analysis and include all the possible combinations of the 9 conditions, either represented in the cases or not.

We excluded from the analysis the combinations associated to less than three cases and used as consistency level of the configuration (which indicates the proportion of expected outcomes produced by the configuration) the value of 0.80, which is higher than

the 0.75 suggested by Ragin (2000, 2008). The value of 0.80 means, for example, that if 10 cases share the same combination of conditions (configuration), and in only less than 8 of those 10 cases the outcome is as expected, the configuration is entered in the algorithm as ‘not leading to the outcome’.

We employed the software fsCQA 2.5 (fsqca.com), that relies on the algorithm developed by Ragin (2008), to reduce the “truth table” rows to a number of simpler combinations. This analysis generates three types of solutions that identify the combinations of conditions that predict membership in the outcome condition: complex, intermediate, and parsimonious. The complex solution considers all the conditions leading to the outcomes and does not rely on any simplifying assumptions; the intermediate solution distinguishes “easy” and “strong” remainders – i.e. combinations of conditions that are not actually present in dataset – and operates simplifications based only on easy remainders; finally, the parsimonious solution uses both types of remainders.

Fuzzy set analysis allows identifying the necessary and sufficient conditions for an outcome. Necessary conditions are attributes that are present in all the cases that display the outcome, but possibly also in cases that do not display the outcome; instead, sufficient conditions always lead to the outcome. Necessary conditions may lead to the outcome together with various combinations of other conditions, and several groups of sufficient conditions may exist (i.e. equifinality).

Table 3
Criteria for calibration of continuous conditions.

Interval of the original continuous conditions	Value assumed after calibration
Above the 90th percentile	1
Between the 75th and 90th percentile	0.75
Between the 25th and 75th percentile	0.50
Between the 10th and 25th percentile	0.25
Below the 10th percentile	0

Further, the fsQCA algorithm allows the categorization of conditions into core and peripheral (Fiss, 2011). In our case, core conditions are those essential for the occurrence of the EO imprint; peripheral conditions support core conditions but are not crucial for explaining EO imprint emerging from a specific path.

4. Results

Our initial examination of the necessary conditions for high EO finds that in none of the causal conditions, neither their negations, the consistency score overcomes the conventional threshold of 0.90 that is required to be considered as a necessary condition for the outcome, in any of the three leadership situations (Table 4).

We then turn to the analysis of sufficient conditions. Table 5 shows the configurations leading to high EO, based on the intermediate solutions of the fsQCA analysis; the Table reports the values of raw, unique coverage, and consistency of each configuration and of the solution. The raw coverage refers to the proportion of outcome cases that are covered by a given configuration. The unique coverage is the proportion of outcome cases that are covered only by a given configuration. The consistency of each configuration refers to the proportion of the outcomes predicted by the configuration. The solution coverage refers to the proportion of outcome cases that are covered by the combination of all configurations. Finally, the consistency of the model, which is some sort of measure of “goodness of fit” of the model, refers to the proportion of the outcomes that are predicted by the model.

As shown in Table 5, each analysis has produced more than one configuration, highlighting a phenomenon of equifinality of paths leading to high EO. The solution coverages and solution consistencies for the three groups of entrepreneurs are very high. In the case of successors, nearly 80% of the outcome cases (high EO) is explained by the model. The coverage for the other two sets of entrepreneurs is close to 0.90. Further, the level of consistency (the proportion of outcomes cases in all the cases having the configurations arising from the analysis) is 0.90 in the analysis related to the successors and close to 0.90 in the other two analyses. Overall, these values indicate a good performance of our analysis in

explanatory terms (Fiss, 2011).

4.1. Robustness tests

The use of conventional statistical techniques may offer a validation of the robustness of the results of the fsQCA, although they imperfectly account for some of the assumptions of our study.

The predominant linear paradigm does not support the complex causality and non linear relationship inherent in the configurational approach. Variables are not assumed to compete in explaining the variation in the outcome but to produce synergistic effects while interacting (Delery & Doty, 1996). Likewise, equifinality (i.e. the potential existence of more than one configuration that determines a specific outcome) cannot be assessed through multivariate regression analyses. The use of interaction effects might be a way to overcome the limits of linear regression analysis but analyses with above three interactions are difficult to interpret (Dess, Lumpkin, & Covin, 1997) and do not take into account the possible existence of different paths to the outcome.

In particular, in our case, as we put forward that EO is generated by the interrelated effect of personality traits and motivations with the social context in which entrepreneurs operate, accounting for this notion in a regression analysis would require interacting *all* the explanatory variables under consideration with each other; however, performing a regression with nine interacting variables is computationally unfeasible.

For this reason, we pursued the second best option of carrying out a cluster analysis.

Before the development of qualitative comparative analyses, authors studying configurations have extensively employed cluster analysis (among others, Ferguson, Deephouse, & Ferguson, 2000; Lim, Acito, & Rusetski, 2006; Moores & Yuen, 2001). Cluster analysis, even if often more effective than linear regression in highlighting equifinality, has the limit of aggregating cases that are similar under a number of characteristics, which, may not necessarily be significant determinants to the outcome or putting in separate clusters cases that differ for characteristics that are not significant to the outcome. Also, every cluster remains as a black

Table 4
Analysis of necessary conditions.

	Successor		FB founder		Non-FB founder	
	Coverage	Consistency	Coverage	Consistency	Coverage	Consistency
Conditions						
Intrinsic motivations						
Need-for-achievement	0.701	0.701	0.739	0.682	0.823	0.553
~Need-for-achievement	0.668	0.466	0.597	0.436	0.581	0.375
Need-for-independence	0.614	0.693	0.689	0.678	0.661	0.506
~Need-for-independence	0.783	0.505	0.664	0.462	0.774	0.449
Emotional attachment	0.690	0.686	0.731	0.625	0.726	0.692
~Emotional attachment	0.723	0.506	0.681	0.529	0.742	0.374
Extrinsic motivations						
Material needs	0.652	0.690	0.739	0.591	0.774	0.578
~Material needs	0.761	0.511	0.613	0.510	0.661	0.390
Social expectations	0.772	0.648	0.403	0.750	0.355	0.629
~Social expectations	0.658	0.528	0.857	0.447	0.882	0.386
Personality traits						
Internal LOC	0.717	0.506	0.798	0.556	0.742	0.43
~Internal LOC	0.582	0.572	0.521	0.512	0.629	0.481
Tolerance for ambiguity	0.603	0.649	0.824	0.695	0.597	0.529
~Tolerance for ambiguity	0.728	0.484	0.487	0.384	0.806	0.424
Organizational context						
Age	0.668	0.618	0.697	0.488	0.726	0.495
~Age	0.761	0.562	0.655	0.488	0.806	0.515
Size	0.734	0.605	0.714	0.563	0.774	0.522
~Size	0.707	0.578	0.639	0.539	0.758	0.490

Note: The ~ symbol indicates the absence of the condition in the occurrence of the outcome.

Table 5
Configurations leading to EO among the different types of organizational leaders.

	FB founder					Non-FB founder				FB successor		
	1a	1b	1c	2a	2b	3	4	5a	5b	6a	6b	7
Intrinsic motivations												
Need-for-achievement	•	•			•	•			•	•	•	•
Need-for-independence				●	●						•	●
Emotional attachment	●	●	●			•	⊘	⊘	⊘	⊘	⊘	●
Extrinsic motivations												
Material needs		•	•	●	●	⊘	•	⊘		⊘	•	⊘
Social expectations	⊘		⊘	•	•	⊘	•	⊘	⊘	⊘	•	⊘
Personality traits												
Internal LOC			•	•				•	•	•	•	•
Tolerance for ambiguity	●	●	●					•	•	●	●	•
Organizational context												
Firm age			•					⊘			⊘	
Firm size	•	•	•		•	•						
Raw coverage	0.218	0.283	0.392	0.130	0.174	0.100	0.100	0.567	0.100	0.460	0.109	0.162
Unique coverage	0.087	0.196	0.174	0.130	0.087	0.100	0.100	0.567	0.100	0.460	0.109	0.162
Consistency	0.835	0.929	0.947	0.857	0.890	0.100	0.100	0.850	0.100	0.895	1.000	0.857
Solution coverage	0.892					0.867				0.830		
Solution consistency	0.895					0.897				0.920		

Note: Black circles indicate the presence of a condition, circles with a slash (⊘) indicate its absence, large circles indicate core conditions and small ones peripheral conditions. Blank spaces refer to “do not care” conditions.

Table 6
Cluster analysis metrics for hierarchical and K-means cluster analyses.

Number of clusters	Hierarchical		K-means
	Duda/Hart	Calinski/Harabasz	Calinski/Harabasz
5	0.830 (18.22)	9.83	9.83
6	0.939 (2.91)	11.53	9.96
7	0.853 (8.62)	10.18	10.57
8	0.916 (6.51)	10.29	11.23
9	0.814 (7.30)	9.89	11.22

box (Fiss, 2007) and the contribution of each determinant does not emerge from the analysis.

With the aim of showing differences in results between fsQCA and cluster analysis we report in this section the results of an analysis carried out on the same data. As expected, results from the two analyses are not contradictory, but the cluster analysis does not allow to identify core and peripheral conditions and to assess multiplicative or substitution effects among determinants.

As Cooper and Glaeser (2011) explain, both fsQCA and cluster analysis classify cases in a multidimensional space, but while the former allocates cases to theoretically defined types, the latter relies on distance-based measures minimization algorithms to define clusters. Because of this different approach, the two techniques may generate different categorizations depending on the distribution of cases in the multidimensional space; differences in outcomes are more pronounced if many cases present conditions around the threshold for the membership in a set: although the distance between these case is low, they belong to conceptually different categories.

Inspired by the approach pursued by Fiss (2011) to validate the results of fsQCA with cluster analysis, we adopted a two-step approach. First, we performed a hierarchical cluster analyses using Ward’s minimum variance method. Based on inspection of dendrograms corroborated by the Duda/Hart and Calinski/Harabasz measures, we identified between 6 and 8 clusters (Table 6). We used the centroids of these clusters as seeds for the subsequent K-means cluster analysis, which indicates the existence of 8 clusters (Table 7). In all these analyses, we considered all the factors covered

by the fsQCA, including EO as a binary variable taking value 1 in case this attribute is above the 75th percentile (i.e. have high EO), and 0 otherwise. The other variables are continuous and were standardized prior to the analysis to assure comparability. As we combine binary and continuous variables, we apply Gower (1971) similarity distance, as indicated by Everitt, Landau, Leese, and Stahl (2011).

The clustering algorithm matches together all FB founders (clusters 1–3), non-FB founders (clusters 4–5) and FB successors (clusters 6–8); within each category of entrepreneurs, only one cluster is characterized by high EO.¹ Focusing on these clusters, we find a substantial, although not perfect, correspondence with the results of the cluster analysis. Fig. 1 offers a graphic comparison of the centroids of clusters characterized by low and high EO in the three categories of entrepreneurs.

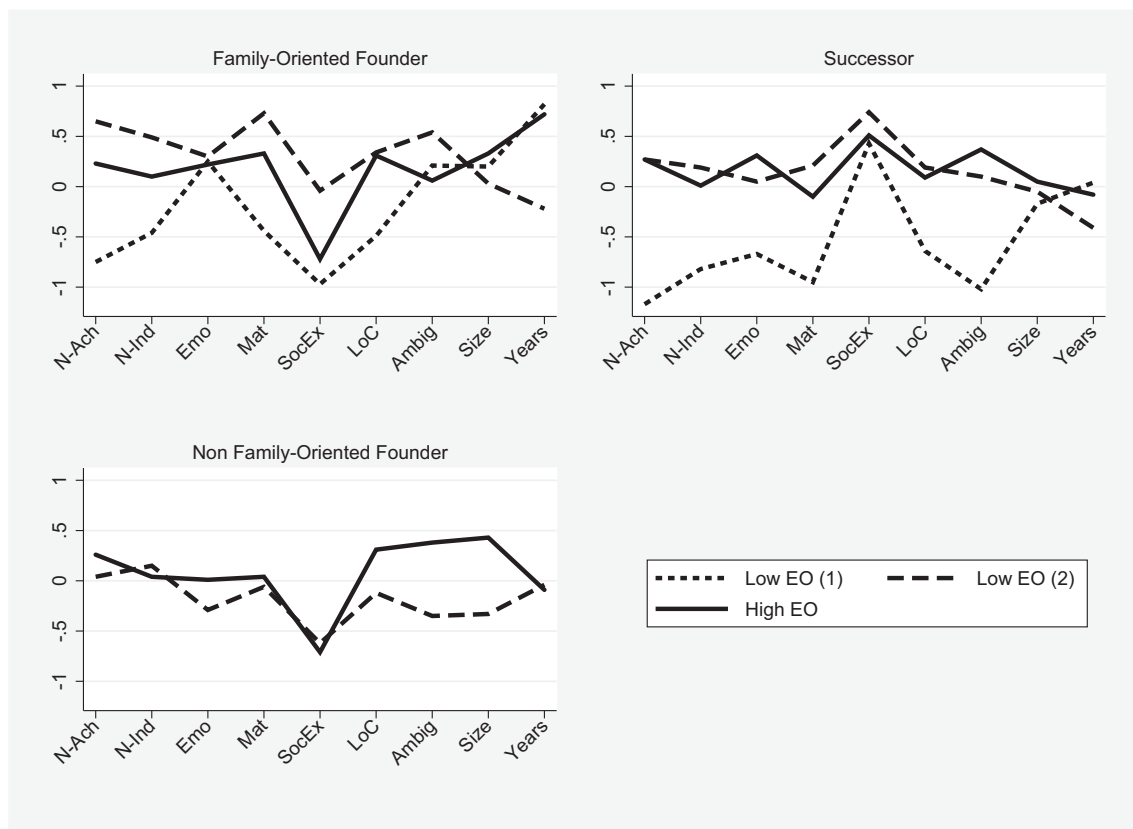
In the case of successors, cluster 8 shows positive values for Need-for-achievement, Emotional attachment, Social expectations, and Tolerance for ambiguity, neutral for Need for independence and Internal LOC, negative for Material needs. The neutral value of

¹ To further validate these results, we conducted three two-step cluster analyses – one for each category of entrepreneurs, consistently with the fsQCA procedure – and replacing the binary variable for high EO with the continuous measure of the variable. While this exercise generates five clusters for each category of entrepreneurs; these clusters comprise both high and non-high EO cases, and high EO cases spread across multiple clusters, the large majority of high EO cases concentrates in one single cluster, of which they represent the majority of cases. The centroids of these clusters resemble the outcomes of fsQCA. Results of this additional cluster analysis are available upon request.

Table 7

Results of K-means cluster analysis. Cluster centroids.

	1	2	3	4	5	6	7	8
Need-for-achievement	-0.75	0.65	0.23	0.04	0.26	-1.17	0.27	0.27
Need-for-independence	-0.46	0.49	0.10	0.15	0.04	-0.82	0.19	0.01
Emotional attachment	0.25	0.30	0.22	-0.29	0.01	-0.67	0.05	0.31
Material needs	-0.44	0.73	0.33	-0.06	0.04	-0.95	0.21	-0.10
Social expectations	-0.97	-0.04	-0.72	-0.62	-0.71	0.43	0.74	0.51
Internal LOC	-0.49	0.34	0.31	-0.12	0.31	-0.64	0.19	0.09
Tolerance for ambiguity	0.21	0.54	0.06	-0.35	0.38	-1.02	0.10	0.37
Size	0.20	0.03	0.33	-0.33	0.43	-0.17	-0.05	0.05
Years as entrepreneur	0.82	-0.22	0.72	-0.04	-0.09	0.04	-0.41	-0.08
High EO	0%	0%	100%	0%	100%	0%	0%	100%
Family oriented	100%	100%	100%	0%	0%	0%	0%	0%
Non family oriented	0%	0%	0%	100%	100%	0%	0%	0%
Successor	0%	0%	0%	0%	0%	100%	100%	100%
Observations	33	19	21	34	13	18	73	21

**Fig. 1.** Graphic representation of the results of K-means cluster analysis.

Need for independence (instead of positive) represents a deviation compared to the fsQCA; also, we find a positive sign for Emotional attachment, while the results of fsQCA show that either presence or absence of this attribute may lead to high EO.

In the case of FB founders, cluster 3 shows congruence in all the variables with fsQCA, with the partial exception of Social Expectations that in the latter analysis may be present or absent, while the centroid of cluster 3 is strongly negative. In the case of non-FB founders, cluster 5 partially deviates from the results of fsQCA for what concerns Emotional attachment and Material needs, that are neutral while in three out four configurations are absent core conditions.

To further validate the results accounting for size-dependent factors, we also carried out the analysis on the subset of firms

with more than five employees, which covers 210 out of 257 cases. The fsQCA reiterates the results in terms of number and features of configurations; also the two-step cluster analysis leads to the identification of 8 clusters, in which the three strategic leadership situations are grouped together and with a single entrepreneurially oriented cluster within each of them.

Overall, the comparison of the results of fsQCA with cluster analysis indicate that the two methods lead to consistent results, but the former allows a much deeper understanding of the phenomenon. For instance, fsQCA shows that either the presence or the absence of some conditions may determine an outcome, depending on which configuration they are part of; for these factors, cluster analysis finds a neutral effect, because it offsets the presence and absence of the condition. While this issue could be addressed by the

introduction of interaction terms in a multiple regression analysis, the technique is suitable only for very small sets of explanatory variables.

Having tested the higher explanatory potential of fsQCA against traditional methods, in the following sections we proceed with the analysis and discussion of the configurations according to our research propositions.

4.2. Multiple and equifinal pathways to EO

In line with our [Proposition 1](#), the results show that multiple combinations of intrinsic motivations, extrinsic motivations and personality traits drive to EO; in other terms, a given factor is insufficient to lead to the outcome without the support of other drivers. For each strategic leadership situation we find multiple configurations equally conducive to the same outcome, high EO. It also emerges that the configurations are different in the three strategic leadership situations, as no identical configuration is found in any pair of subsets. We also find that both presence and absence of a given factor may be conducive to EO, depending on the other factors they are combined within the configuration. Configurations 3 and 4 in the case of non-family founders illustrate this phenomenon: social expectations may be either absent or present to drive to EO; however, in the first case, EO is found if emotional attachment is present and material needs are absent, while in the latter, emotional attachment must be absent and material needs present.

Three configurations are found in the case of FB successors. Two (6a and 6b) include one core condition, namely, the presence of tolerance for ambiguity, a combination of internal and external motivations and the absence of the emotional attachment to the family. The size of the company does not play any role, while the company age plays a negative role in configuration 6b. Configuration 7 revolves around the absence of social expectations (core condition), and the presence of internal motivations such as emotional attachment and need-for-independence. No specific role is played by the tolerance for ambiguity, the age and the size of the company. In the case of FB founders, we find five configurations: three are anchored to the core conditions of presence of emotional attachment and tolerance for ambiguity; two require the presence of both need-for-independence and material needs. Four configurations characterize non-FB founders. In this case, the core conditions refer to the absence of social expectations and emotional attachment. EO is driven by the absence of only one or both factors, depending on the presence or absence of other complementary conditions.

4.3. The founders' pathways to EO

4.3.1. FB-founders

[Proposition 2](#) argues that the EO imprint of FB founders is subject to the influence of the family and to the intergenerational outlook of the business.

The FB founder long-term commitment with the company clearly emerges in configurations 1a, 1b and 1c, where emotional attachment is a driver of EO, suggesting that non-financial goals might be compatible with the pursuit of entrepreneurial strategies: such goals may indeed include the possibility to shape the business as a creative and vibrant firm. However, emotional attachment is a double-edged sword, as it may impede EO and trigger conservative strategies aimed at protecting the traditional family values and the affective commitment within the company (e.g. [Garcés-Galdeano, Larraza-Kintana, García-Olaverri, & Makri, 2016](#); [Marchisio, Mazzola, Sciascia, Miles, & Astrachan, 2010](#)). To neutralize this possible conservative tendency, it seems that articulated configurations of

the other attributes need to be in place; common to all of them is tolerance for ambiguity, which helps leaders to make sense of the contradictory goals set by the family and the firm, and to deal with uncertain innovation projects. Furthermore, the strategic leadership needs to present some internally driven attitudes that may take the form of either need-for-achievement (1a, 1b) or internal LOC (1c).

Looking closer at configurations 1a and 1b, we observe two distinct profiles of leaders with need-for-achievement, i.e. entrepreneurs who see the firm as a way to express their skills and creativity: the first seem to rule out the interferences of family expectations on the definition of the strategy; this profile could resemble the model of a founder-entrepreneur who is driven by the desire to affirm him/herself through the firm – that is regarded as an extension of the individual, as emotional attachment indicates – and who puts the family goals in the background (e.g. [Cruz & Nordqvist, 2012](#)). However, the second profile allows for family pressure to influence the imprinting process, and requires the presence of material rewards. We speculate that these leaders pursue the strategy of introducing innovations that have a rapid return on the investment, so that their and their family's material needs can be satisfied. In the case in which EO is not sustained by the leaders' desire to express their skills and knowledge (1c), both the presence of material needs and absence of social expectations need to be in place. This suggests that the substitution of internal LOC for need-for-achievement as a driver of EO demands more complementary conditions.

Configurations 2a and 2b show an alternative route to EO that is driven by the desire of the leader to generate an adequate wealth, particularly for family members, as both material needs and social expectations are present (e.g. [Schulze, Lubatkin, & Dino, 2003](#)). Entrepreneurs who are very tied to their family context may need to be autonomous in the business sphere in order to identify and pursue entrepreneurial opportunities – somehow compensating for the strong affective and material bond with their family. In this case, need-for-achievement resembles a substitute for internal LOC as a complementary feature in the configuration.

4.3.2. Non-FB founders

The situation of non-FB founders seems to be the less prone to the constraints of the family context, and therefore, in line with [Proposition 3](#), the sources of imprint can be mainly interpreted in light of the various personal pathways that motivated the entrepreneurial choice. It seems that the founding pathways that are associated with an EO imprinting tend to rule out external drivers of motivations and privilege to some extent internal factors of motivation and personality.

In particular, in the majority of configurations extrinsic motivations are absent in the path to EO (3, 5a, 5b). Configuration 4 seems to resemble a paradigmatic profile of an entrepreneur who starts a new business motivated by imagination and enjoyment for the technical dimension of the activity, is passionate about the firm which perceives as an aspect of his/her personality; in this case, material needs and social expectations would dampen leader's capacity to infuse entrepreneurial attitudes in the organization; configuration 5b seems to be a variation of this pattern, as emotional attachment must not be present and material needs may be either present or absent; this greater flexibility is compensated by supporting traits of internal LOC and tolerance for ambiguity. Configuration 5a remarkably differs from the previous two because it does not require need-for-achievement as a motivation, but its triggering effect must be compensated by both supportive personality traits. When extrinsic motivations are present (4), leaders must have both need-for-achievement and not be emotionally attached to stimulate high EO in their firm. This configuration

seems to point to a type of leader who sees business success as a mechanism to advance social condition, in terms of wealth and social status. Overall, these results support the idea that an EO imprint derives from those individuals that present the traits of the growth-oriented founder (Carland et al., 1984; Davidsson, 1989; Davidsson & Henrekson, 2002), in particular regarding the tolerance for ambiguity, internal LOC and either the need for achievement or the preference for monetary rewards. On the other hand, the “must be absent” conditions clearly exclude those traits that have been associated with the “lifestyle entrepreneurs” or “small business owners” (Carland et al., 1984; Burns, 2010).

4.4. The successors' pathways to EO

Proposition 4 suggests that successors are subject to both the expectations of the family and the challenges of organizational change, which may be needed to initiate a metamorphosis of the predecessor's imprint (Simsek, Fox et al., 2015; Simsek, Jansen et al., 2015), or to adapt it to changing environmental conditions (Cruz & Nordqvist, 2012; Jaskiewicz, Combs, & Rau, 2015). Consistently, all the configurations relative to successors require the presence of need-for-achievement and internal LOC, which indicate a strong internal drive. Also, EO is high in firms ran by successors who do not accomplish social expectations – i.e. who do not define the business goals under the influence of family stakeholders – nor have material needs – i.e. can re-invest financial resources in the firm (configurations 6a and 7), instead of devoting them to the settlement of family needs and issues (e.g. De Vries, 1996; Miller et al., 2013). In this case, either presence or absence of emotional attachment may be part of the configuration. Emotional attachment may induce family business successors to fear to lose something precious that they have inherited and want to preserve and increase (Berrone, Cruz, & Gomez-Mejia, 2012; Strike, Pascual, Stephen, & Lorenzo, 2015). When this factor is present, need-for-independence could sustain attempts to introduce strategic discontinuities in an organization in which the legacy of the previous generation is still present (Pieper, Anne, Jerry, & Joseph, 2015); absence of this motivation would lead the leader to simply replicate existing strategies, or fail in taking the entrepreneurial component of the predecessor's legacy (Jaskiewicz et al., 2015).

High EO is found also in firms ran by successors who are driven by material needs and societal expectations (configuration 6b), but in this case a large number of concurrent conditions must be in place; specifically, leaders must present need-for-independence, need-for-achievement, internal LOC, tolerance for ambiguity and absence of emotional attachment. In other words, to overcome the conservative drift of external motivations, strategic leaders need a full range of supporting motivations and personality traits. These findings are consistent with the idea that the entrepreneurial drive in the successor needs a considerable amount of “fuel” in terms of push motivations and attitudes, to overcome a sort of barrier arising from her/his personal background in terms of inherited knowledge base and mindset.

To summarize, three types of successors create an EO imprint: those who re-found a business with the aim of introducing innovations, rather than to preserve its assets (configuration 6a); those who explore entrepreneurial opportunities within the framework of a family business (configuration 6b); those who affirm themselves as the new leaders of an organization to which they attach an important non-economic value, and necessitate to be legitimated by the rest of the organization (configuration 7). Interestingly, the successors' group is the one with the lowest number of indifferent conditions, suggesting that the constraints of this situation clearly specify which features a leader should have to implement entrepreneurial strategies.

5. Implications for theory and practice

Our study contributes mainly to the research on the antecedents of EO. So far research on the determinants of EO has been scarce compared to the study of its performance implications, and has mainly focused on the environmental, organizational or surface-level demographic factors (Wales, 2016). Our results highlight the importance of the personality traits of the entrepreneur as antecedent of organizational level EO, in line with the resurgence of the interest in entrepreneurial personality (DeNisi, 2015; Miller, 2015) and with recent recommendations by leading entrepreneurship scholars, who recognize that an attention to the leaders' psychological profile is crucial to the understanding of entrepreneurship, especially in the context of smaller firms (e.g. Miller, 2011; Simsek, Fox et al. 2015, Simsek et al., 2010). The adoption of a configurational perspective in the study of the personality – EO link allows us also to answer to the call of prominent scholars in the field of entrepreneurship (see for example Gartner, 2010) according to whom studies should aim at showing varieties of profiles whereby relevant personality traits and motivational features may combine, also in synergistic or substitutive ways and interact with the social context where the entrepreneur is embedded. We identify 13 configurations relative to individual-level attributes that are all equally effective in producing EO at the organizational level. The three strategic leadership situations that we considered – FB founder, non-FB founder and FB-successor – differ in the attributes necessary for EO and also in the complementarity among attributes; furthermore, within each leadership situation, several configurations are possible.

Our configurations suggest that the family social context combined with the organizational path dependency produce significant constraints to the possibility of the leader to generate an EO imprint on the company. These constraints are reflected in the motivational and personality pathways that, in the cases of FB-founders and FB-successors can be interpreted as significantly narrower in comparison to the case of non-FB founders.

These results contribute also to bridge the literature on EO and the organizational imprinting perspectives (Marquis & Tilcsik, 2013; Simsek, Jansen et al., 2015), by providing novel insights on the impact of leader's features on company level outcomes. In particular, our results enrich the knowledge of intergenerational EO as an imprinted feature of family firms (Hall, Melin, & Nordqvist, 2001; Zellweger et al., 2011), and, more generally, contribute to the understanding of the way family embeddedness shapes the leader's imprint on the organization (Pieper et al., 2015; Jaskiewicz et al., 2015).

Our findings may have also useful managerial implications. Specifically, the approach we adopted could be used to support to the decisions of private equity investors in the screening of entrepreneurs and in the discrimination between growth oriented profiles versus lifestyle profiles. The rationale behind our analysis could also be a guide for the successor's selection in the family business setting as well as for the definition of training and coaching interventions for ought-to-be entrepreneurs.

6. Conclusions and limitations

In this study, we explored the personal characteristics of individual entrepreneurs that generate an EO imprint at the organizational level by adopting a configurational perspective. We showed how personality traits and motivational features may combine in synergistic or substitutive ways and interact with the social context where the entrepreneur is embedded. We considered the family business background as a prominent feature of entrepreneur's social context, and differentiated between three types of

entrepreneurs, namely: family business founders, non-family business founders (with no intention to establish a family business) and family business successors. Our results reveal that the social and organizational context interact with the personal features of the leader in creating various pathways to EO.

Of course our work presents a number of limitations that could be addressed in future studies. A major limit arises from the sample that includes only Italian entrepreneurs; a cross-cultural study could add new dimensions to the configurations. New insights could also derive from the inclusion of other variables accounting for family influence, such as the role of other family members in the company and the generation in charge. Configurations could be expanded by considering other determinants of EO that are not associated with the individual, such as environmental dynamism or organizational structure of the firm. Another approach may lead to disaggregate EO into its components, that have shown to have a certain degree of independence from one another. Such an approach would pave the way to the identification of the motivations and personality traits that lead to different configurations of EO and possibly to different strategic postures.

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Appendix

Scales used to measure motivations and personality traits

The items have been measured with 5-points Likert scales (e.g. 1: strongly disagree, 5: strongly agree; 1: never, 5: always).

Emotional attachment

1. I cannot imagine myself without my business.
2. I love my business.
3. I am emotionally attached to my business.
4. My feelings depend on how my business does.

Cronbach Alpha: 0.79

Social expectations

1. As an entrepreneur I want to make my family and friends proud.
2. As an entrepreneur I want to follow an example I admire.
3. As an entrepreneur I want to continue a family tradition.

Cronbach Alpha: 0.71

Material needs

My goals as an entrepreneur are:

1. To make lots of money.
2. Improve my personal income.
3. Have access to material benefits.
4. Attain financial security for my family and myself.

Cronbach Alpha: 0.59

Need-for-achievement

My goals as an entrepreneur are:

1. Develop new ideas.
2. Follow a personal vision.
3. Realize myself as a person.
4. Continue learning and improve my skills.
5. Succeed in the challenges of running a business.

Cronbach Alpha: 0.67

Need-for-independence

My goals as an entrepreneur are:

1. Be my own boss.
2. Have the power to decide independently.
3. Have personal freedom.
4. Be independent.

Cronbach Alpha: 0.68

Locus of control

1. I believe that I can determine my own destiny.
2. When I make a plan I am sure that the planned will become reality.
3. I believe my success lies in my own abilities and efforts.
4. I believe success is a product of luck and fate. (*Reverse coded*)

Cronbach Alpha: 0.66

Tolerance for ambiguity

1. I enjoy working in uncertain situations.
2. I often get irritated when unexpected events ruin my plans.
3. I enjoy the challenges of uncertain situations.

Cronbach Alpha: 0.57

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