Contributions to Management Science

Ana Tur Porcar
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Inside the Mind of the Entrepreneur

Cognition, Personality Traits, Intention, and Gender Behavior

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Part I
Entrepreneur's Cognition and Intention

An Integrated Model of Intentional Entrepreneurial Action

Kevin C. Cox, Jason Lortie, and Gary Castrogiovanni

Abstract The psychological perspective of entrepreneurship has a rich history in entrepreneurship research. While personality and psychology have both been identified as key components in explaining how and why entrepreneurs act, many questions remain about what different factors lead to entrepreneurial action and outcomes as well as the role these factors have in the process. We shed light on these important questions by integrating two leading models of the individual psychology of entrepreneurship: the Action-Characteristics Model (ACM) of Entrepreneurship and the Theory of Planned Behavior (TPB). We create the Intentional Entrepreneurial Action Model by integrating these two perspectives together to address concerns about the ACM and TPB considered separately. By synthesizing these two models into the Intentional Entrepreneurial Action Model and presenting supporting propositions, we develop an explanation about how entrepreneurs think and how this intentional process leads to entrepreneurial action and outcomes.

Keywords Action-characteristics model of entrepreneurship • Theory of planned behavior • Entrepreneurial outcomes

1 Introduction

Entrepreneurship has been defined as the identification, evaluation, and exploitation of opportunities (Shane and Venkataraman 2000). The phenomenon of entrepreneurship is largely centralized around the individual-opportunity nexus (Shane 2003). Therefore, unsurprisingly, a wide variety of individual factors influence the processes of identification, evaluation, and exploitation. The psychological perspective offers considerable insight into how various individual factors influence these processes.

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Psychological and cognitive perspectives have a rich history in the entrepreneurship domain (e.g. Comegys 1976; McClelland and Winter 1971; McGaffey and Christy 1975) some of which are regarded as foundational works during the early emergence of entrepreneurship as a distinctive field of study (e.g. Schumpeter 1934; McClelland 1961). More recently, the psychological perspective has emerged as an effective and appropriate perspective for entrepreneurship research. This focus on the psychological perspective has led to numerous theoretical developments and research findings that have informed the field of entrepreneurship and provided important insight into the role of the entrepreneur throughout the entrepreneurial process. Psychology based perspectives may offer the most fruitful insight into the "the people side of entrepreneurship", and address some of the entrepreneurship's most fundamental questions (Mitchell et al. 2002, p. 93).

To date, the psychological perspective has provided considerable contribution to the entrepreneurship domain via the continued evolution of more accurate and sophisticated models of an array of psychological influences particularly relevant to the process of entrepreneurship. However, research focused directly on the outcomes (e.g. opportunity identification, new venture performance) associated with psychological and cognitive influences remains underdeveloped. This is the fundamental challenge faced by the overwhelming majority entrepreneurship research steeped in the psychological perspective. The result is either research which fails to directly address fundamental entrepreneurial outcomes, or weak theoretical linkages paired with empirically driven findings. Both of which inaccurately link psychological factors directly to entrepreneurial outcomes.

The central purpose here is to develop an integrated and comprehensive model of psychological factors that influence entrepreneurial action and entrepreneurial outcomes. Our model effectively integrates the Theory of Planned Behavior (TPB) and Action-Characteristics Model (ACM) of entrepreneurial behavior. The intent is to establish clearly delineated links between psychological factors, entrepreneurial action characteristics, and subsequent entrepreneurial outcomes that are directly related to entrepreneurial thinking. The intended result is the development of a more complete explanation and clear depiction of the role of psychological factors in the process of entrepreneurship.

2 Literature Review

2.1 Overview

The objective of the following sections is to provide an extensive review of the existing models which attempt to provide a comprehensive explanation about entrepreneurial action and outcomes. We provide a complete overview and explanation of the theoretical frameworks [the Action-Characteristics Model of entrepreneurial success (ACM) and the Theory of Planned Behavior (TPB)] along with

more recent important theoretical and empirical developments relevant to the application of each model in the entrepreneurship domain. This serves as the theoretical foundation upon which we will build our integrative conceptual model.

2.2 The Action-Characteristics Model of Entrepreneurship

The ACM of entrepreneurship represents a recent evolution of what was initially referred to as the Giessen-Amsterdam model of entrepreneurial success (i.e. Rauch and Frese 2000). The earlier Giessen-Amsterdam Model is an interdisciplinary model that takes into consideration several different areas investigated in entrepreneurship research beyond psychological factors. However, this earlier version of what eventually evolved to the full ACM, is an action-based model because no direct relationships are proposed between personality, human capital, or environment and entrepreneurial success, although many of these relationships have been, and continue to be, studied. Although perhaps controversial, the model rests upon the fundamental assumption that there cannot be success without action (Rauch and Frese 2000). As such, action is essential and central to the model and the goal oriented strategies and tactics of actions are the conduit through which all entrepreneurial success is accomplished (or not accomplished). Sometimes goals, strategies, and tactics will be wrong, or inefficient, which is one example of how prior failure (or success) influences strategies that explain the proposed reciprocal relationship between success and strategy. Preliminary empirical findings focused on the indirect effect of personality traits on entrepreneurial success via action strategies and growth intentions provide initial support for the model (e.g. Baum and Locke 2004; Frese et al. 2007). However, this earlier model is necessarily less specific and more all-encompassing as it is designed for application at different levels of analysis (organizational or individual). Therefore, we next focus specifically on the revised versions of the ACM.

The second version of the ACM of entrepreneurship (i.e. Frese 2009) represents more recent and individually oriented evolution. This framework describes characteristics of active performance and postulates how they are influenced by personality and human capital as well as how active performance is directly related to entrepreneurial success. It also assumes that active performance may influence environmental conditions and is also influenced by the environment.

Continuing to the most comprehensive and recent ACM (i.e. Frese 2009; Frese and Gielnik 2014), the most fundamental and important premise of the ACM is the associated action-based assumptions underlying the model. Specifically, there is only a direct path to success from actions. Thus, just as with the previous derivations of the model, personality, motivation, education, cognition and even the environment are not expected to have a direct effect on success. Factors other than action only influence success indirectly through an entrepreneur's actions, as there is no sound theoretical rationale to expect a direct relationship between these various factors and entrepreneurial success. Instead, it is argued that the factors

depicted only influence success if they influence action, and otherwise have no significant effect.

A few other important aspects of the ACM are also worth noting. First, action characteristics are not explicitly action, but instead ways of performing an action (Frese and Gielnik 2014). Thus, actual action is required, but the way it is performed is of considerable importance. Second, it is assumed that more active action characteristics lead to actions that are more likely to be successful (e.g. more personal initiative, proactivity etc.) (Frese 2009). Third, the framework is organized such that the more distal construct (on the left) are assumed to have less eventual influence on success; whereas those which are nearer (on the right) are to have stronger influences on action and eventual success. Finally, the ACM offers a process oriented perspective of entrepreneurial actions and entrepreneurial success in suggesting that different actions are important at different stages throughout the entrepreneurial process. The ACM is the primary conceptual framework and serves as the foundation which the theoretical model derived here is built upon.

The ACM is a "loose model" that actually "is more of a framework than a real theoretical model" (Frese and Gielnik 2014, p. 428). In its current form, the ACM does not adequately distinguish between intention and action (or action characteristics) but instead lumps them together. This is evident in that "goals/visions," are included as action characteristics while in fact goals, objectives, and the like are much more closely related to intentions (although they certainly influence action). Thus, we propose using the TPB to "tighten" the ACM. Borrowing from and integrating aspects of the TPB enables a theoretically sound distinction between intentions and actions therefore strengthening the eventual conceptual model developed here. The underlying logic, accuracy, and usefulness of the TPB are reviewed in the following section.

2.3 The Theory of Planned Behavior

The fundamental premise of the TPB is that the relationship between an individual's attitudes towards a behavior, the subjective norms surrounding the behavior, and the perceived control over the behavior are all mediated by the individual's intentions. Intention is defined as a person's readiness to perform a given behavior, and it is assumed to be the immediate antecedent of behavior (Ajzen 2011a, b). The three cognitive antecedents to intention include: (1) attitude, which refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior; (2) subjective norms, which refer to the perceived opinions of reference groups (or social pressure) regarding whether or not the behavior should be performed; and (3) perceived behavioral control, which refers to the perceived ease or difficulty of performing the behavior (Ajzen 1991).

The TPB has proven to be a very robust predictor of a wide array of different behaviors as evident by the numerous meta-analyses that support intentions as strong predictors of behavior in many different applied settings (e.g. Armitage

and Conner 2001; Sutton 1998). Perhaps more importantly, within the entrepreneurship domain the TPB has been effectively utilized as a framework for predicting an array of different entrepreneurial intentions such as new venture creation intentions (Kolvereid 1996) and new venture growth intentions (Cassar 2006) as well as a number of relevant behaviors such as venture creation behavior (Chrisman 1999) and new venture growth behavior (Delmar and Wiklund 2008). Additionally, previous entrepreneurship studies have found the three antecedents to explain between 30 and 45% of the variation in intentions (e.g. Linan and Chen 2009; Van Gelderen et al. 2008). Overall, the TPB has been established as a highly relevant and robust framework for predicting business start-up intentions and subsequent behaviors (Kautonen et al. 2013).

3 Intentional Entrepreneurial Action Model

Upon close inspection of the ACM and the TPB it becomes evident that although they are clearly distinctive, the two theoretical frameworks can effectively be integrated. Specifically, the more precise psychological constructs uniquely relevant to entrepreneurship included in the ACM can be appropriately placed within the framework delineated by the TPB. Therefore, the theoretical model developed here integrates specific constructs included in the with the intention-behavior link established by the TPB resulting in a more comprehensive model of how and in what ways psychological factors influence intention and actions of entrepreneurs. This fully integrated model labeled as the *Intentional Entrepreneurial Action Model* is depicted below in Fig. 1.

In reading the Intentional Entrepreneurial Action Model seen in Fig. 1, our general theorizing becomes evident. We believe that by enveloping the TPB in the ACM antecedents and outcomes, a true representation of the psychology of entrepreneurs becomes clear. What entrepreneurs accurately think becomes more evident. The following sections will expand on these proposed relationships as we argue for specific propositions. We note that the relationships within the TPB that we are not altering are already established in the literature, and therefore, there will not be any additional propositions for those relationships since we believe the standard arguments for TPB will hold true.

Personality and Attitudes Towards Action

Largely stemming from the psychological perspective, personality has been previously identified as influential in a wide array of different contexts and related to all types of different outcomes (e.g. leadership style, occupational preference). In the context of entrepreneurship, earlier work focused on personality characteristics yielded very little, and even faced considerable criticism (e.g. Gartner 1989). More recently meta-analytic results suggest that personality does have important role within the context of entrepreneurs even if one's personality does not predict entrepreneurship (e.g. Rauch and Frese 2007; Frese and Gielnik 2014; Zhao et al.

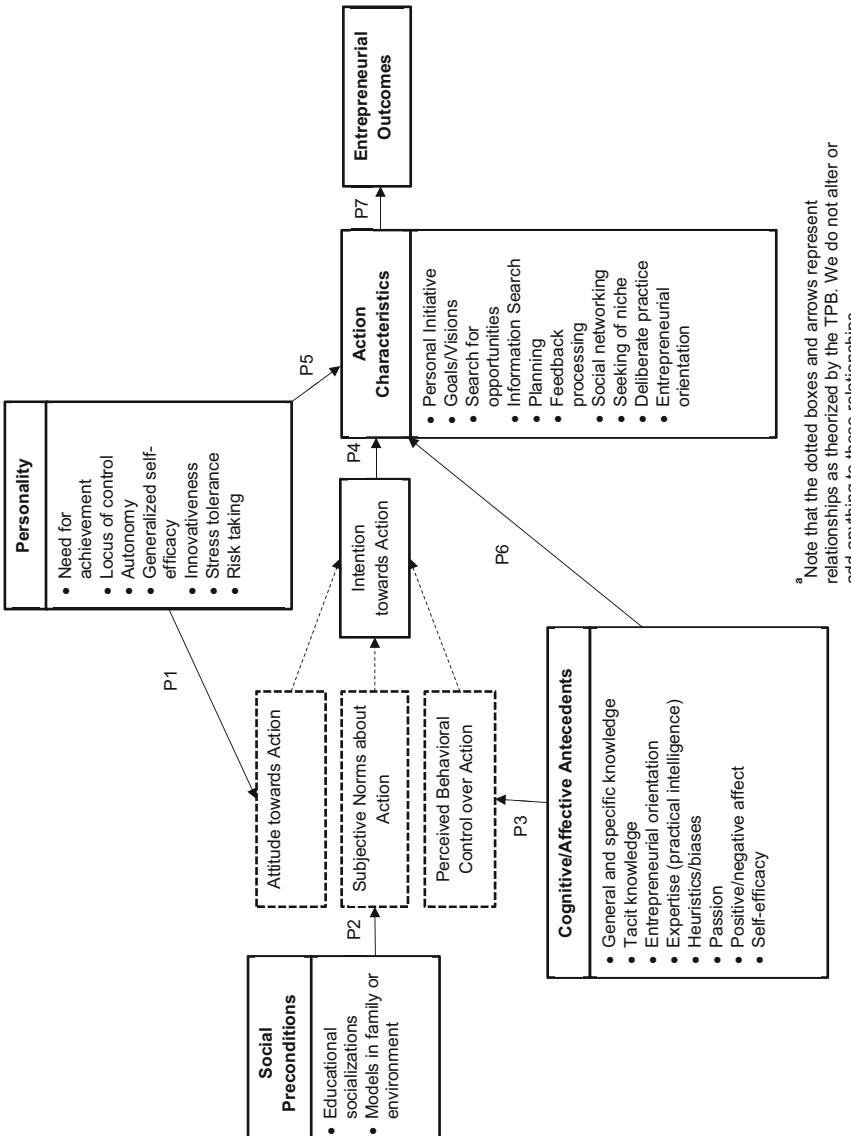

Fig. 1 An integrated model of Intentional Entrepreneurial Action

2010). Building on these (and other) findings we posit that personality directly influences one's attitude towards an entrepreneurial action.

An attitude towards an action refers to the degree to which performance of the action is positively or negatively valued. Further, per the expectance-value model, attitude toward action is determined by the entire set of accessible behavioral beliefs which link the action to various outcomes and other attributes (Ajzen 1991). It is this set of behavioral beliefs which is influenced by various personality-based constructs and then necessarily influences one's attitudes towards an action. For example, consider the implications of need for achievement (nAch) (McClelland 1961). Research focused on nAch suggest that individuals characterized by high levels of need for achievement prefer action associated with intermediate levels of difficulty and risk which subsequently influence attitudes towards action characterized by moderate risk which is support by meta-analytic findings (i.e. Stewart and Roth 2004). Conversely, individuals not characterized by high need for achievement will not form the same attitudes about actions characterized be moderate levels of risk. The same rationale has similar implications for a wide array of different personality traits. Therefore, we argue that personality directly influences one's attitude toward action.

Proposition 1 Personality factors are positively related to the attitude towards an action an individual holds.

3.1 Social Preconditions and Subjective Norms

Social preconditions are expected to influence subjective norms about action. The TPB's definition of subjective norms relates to the perceived opinions of reference groups regarding whether the action should be performed (Ajzen 2011a). In effect, the subjective norms Ajzen theorized about relate to whether or not the individual believes the action in question is appropriate. This belief about "appropriateness" is directly related to what the ACM theorizes about "social preconditions" and factors such as education and role models in the individual's environment. We argue further that these social preconditions that that affect individuals' subjective norms are more well defined as what Berger and Luckmann (1966, 1991) called primary and secondary socializations. Primary socializations are those socializations that individuals receive from their immediate family during the younger formative years of life while secondary socializations are those socializations received from other societal groups other than the family.

Accordingly, the educational socializations reminiscent of the ACM are similar to what Berger and Luckmann (1966) argued were sources of secondary socializations while family role models are primary socializations. We argue that the ACM was close to externalizing "social preconditions", but that a better understanding is via socializations. In terms of integrating the ACM and TPB, these environmental socializations become individualized via an individual's specific subjective norms.

The perceived opinions that people form about an action are ultimately determined by the experiences that they received concerning those actions from the primary and secondary socializations that existed in their lives. In effect, the social preconditions of the ACM allow for a better understanding of where the individual psychological opinions of an action come from for a specific individual.

Proposition 2 Social preconditions are positively related to the subjective norms about an action that an individual holds.

3.2 Cognitive/Affective Antecedents and Perceived Behavioral Control

Both cognitive and affective antecedents have been previously established as having an important role in the process of entrepreneurship (e.g. Baron 2007, 2008; Mitchell et al. 2002, 2007). But as discussed previously, there is insufficient rationale to expect that these factors directly influence entrepreneurial outcomes because action determines outcomes. Instead, we can expect that cognitive and affective antecedents directly influence perceived behavioral control over action.

As one example, consider the self-efficacy construct (Bandura 1982) and the subsequently research specifically relevant to the context of entrepreneurship focused on entrepreneurial self-efficacy. Entrepreneurial self-efficacy is defined as "a person's belief in their ability to successfully launch an entrepreneurial venture" (McGee et al. 2009, p. 965). As such, it represents one's perceived ability to successfully perform tasks and associated demands specifically relevant to the context and domain of entrepreneurship. Relatedly, perceived behavioral control refers one's perceptions of their ability to perform a given behavior. Analogous to the expectant-value model associated with one's attitude toward action, perceived behavioral control is determined by the complete set of accessible control beliefs which refer to beliefs about the presence of factors that may facilitate or impede performance. Clearly then it would be expected that entrepreneurial self-efficacy will directly influence one's perceived control over action related to entrepreneurial initiatives. Therefore, we argue that this complete set of control beliefs is directly influenced by an array of different cognitive and affective antecedents (entrepreneurial self-efficacy being just one example). Thus, we expect cognitive and affective antecedents to influence perceived behavioral control over action.

Proposition 3 Cognitive and affective antecedents are positively related to the perceived behavioral control over an action that an individual holds.

3.3 Intention Towards Action and Action Characteristics

The link between intentions and action characteristics seen in the integrated model of intentional entrepreneurial action is very similar to that of the original arguments made by Ajzen about intentions and behaviors (Ajzen 1991). No behavior can occur without some type of intention on the part of the individual. In terms of integrating intentions with the action characteristics of the ACM, the arguments are very similar. In effect, the actions described by the ACM are intentional actions that require a certain level of intentionality on behalf of the individual prior to those actions being carried out. From an entrepreneurship standpoint, all of the entrepreneurial actions depicted by the original ACM are inherently actions that require some type of physiological energy and thought on behalf of the entrepreneur to carry them out. They are actions that are not random, they do not come about by the entrepreneur drifting into them. Instead, they take intentionality on behalf of the entrepreneur to psychologically plan and prepare for that specific action in question.

Proposition 4 Intention towards an action is positively related to entrepreneurial action characteristics

3.4 Personality and Action Characteristics

We also posit that personality will influence action characteristics for a variety of reasons. First, it should be noted that action characteristics refer not to the actions themselves, but instead to ways of performing actions. This is important because different personality attributes are likely to influence the ways in which various actions are performed, not the action itself. Different personality traits result in different preferences in the way action is performed.

Consider again the preceding example of need for achievement and its implications for action characteristics. Obviously, with most general action there an infinite variation in the way it can be performed. As such, we would expect individuals characterized by high nAch to prefer performing actions in certain ways that will vary from those not characterized by high nAch. For example, in the entrepreneurial context it is likely that nAch will influence opportunity search (among other action characteristics). Need for achievement is related to a preference for moderate difficulty and risk (and subsequently risk propensity). As such, this will influence the search for opportunities. Specifically, opportunities requiring moderate difficulty and moderate risk to exploit will be viewed more favorably compared to opportunities that are easier to exploit and have less risk. Based on this application of this rationale to other personality traits and action characteristics we expect that personality will influence action characteristics resulting in the following proposition.

Proposition 5 Personality is positively related to action characteristics.

3.5 Cognitive and Affective Antecedents and Action Characteristic

Cognitive and affective antecedents strongly influence action characteristics, or the ways in which actions are performed. There are various implications that cognitive and affective antecedents have on action characteristics as an example we consider the potential effects of cognitive biases. Cognitive biases are uniquely important to the entrepreneurial context because empirical research suggests that entrepreneurs may be more susceptible to certain biases (e.g. Busenitz and Barney 1997), which influence decision making processes, eventually impact the way certain actions are performed. Specifically, consider entrepreneurs have been found to be more susceptible to bias associated with overconfidence (Keh et al. 2002), optimism (Hmieleski and Baron 2009), and optimistic overconfidence (Simon and Shrader 2012). Now consider the implications that these distinctive, but related biases would have in the entrepreneurial planning process. Planning is likely to be conducted with the best-case scenario in mind. Conversely, individuals would do not exhibit these optimistic biases will engage in more careful and systematically planning that takes into account various *what if* scenarios. When this same rationale is applied to other cognitive and affective constructs it becomes clear that they will have a direct effect on action characteristics resulting in the following proposition.

In addition, the Azjen posited in the TPB that perceived behavioral control had a direct relation with behavior. While meta-analysis has shown partial support for this direct relationship (e.g. Rauch and Frese 2007; Frese and Gielnik 2014; Zhao et al. 2010), we believe that the lack of full support is due to the idea that perceived behavioral control does not fully represent psychological aspects the way the cognitive and affective antecedents of the ACM do. In these respects, we believe that when accounting for the direct relationship between cognitive and affective antecedents on action characteristics, the supposed link between perceived behavioral control and action should become moot.

Proposition 6 Cognitive and affective antecedents are positively related to action characteristics.

3.6 Action Characteristics and Entrepreneurial Outcomes

Finally, action characteristics refer to how various entrepreneurial actions, or activities are performed rather than the action themselves. We know that a wide variety of activities are uniquely relevant to the process of entrepreneurship (e.g. business planning, opportunity identification and evaluation, networking,

etc.), yet empirical results about how these various activities lead to success is often unclear, inconsistent, or even contradictory. We posit that simply engaging in these various actions will not necessarily lead to entrepreneurial success and that instead what matters is how these activities are performed. There is considerable discretion concerning how various entrepreneurial actions are enacted and how these various activities are undertaken will largely determine whether or not any entrepreneurial objectives are successfully achieved. Therefore, we argue that action characteristics are directly related to entrepreneurial outcomes.

Proposition 7 Action characteristics are positively related to entrepreneurial outcomes.

4 Conclusion

First, this research addresses challenges associated with linking psychological constructs to entrepreneurial outcomes (as discussed above), and therefore address one of the primary shortcomings of psychology-based entrepreneurship research. Identifying how specific psychological factors influence action will shed considerable insight into role that these factors have in indirectly influencing outcomes that are particularly important for entrepreneurship. This research has important significance for theory, future research, practice, and policy.

In terms of theory, the primary objective is to provide an integrated and comprehensive conceptual framework of action-based model of entrepreneurship. This provides a consolidated theoretical foundation for the psychological perspective in entrepreneurship research by clearly establishing links between psychological factors and eventual outcomes relevant in entrepreneurship. This proposed model serves as the missing link between psychology and outcomes—*action*.

The model developed here has important significance for future research as it can easily be applied as a framework. This framework is capable of testing an incalculable number of future hypotheses and proposed relationships among psychology based constructs, intentions, actions, and entrepreneurial outcomes. In fact, the framework is well-suited for testing the influence of most if not all psychological constructs of interest to entrepreneurship researchers.

The relationships identified between action characteristics and entrepreneurial outcomes will be of primary significance to practitioners as these relationships will be directly linked to entrepreneurial outcomes of interest (e.g. performance). Understanding how specific action characteristics influence entrepreneurial outcomes can potentially inform practitioners about the types of actions they may want to purposefully engage in (or avoid) throughout different phases of the entrepreneurship process. Additionally, the links identified between certain psychological factors and entrepreneurial action characteristics will have direct implications for practitioners.

Finally, the research initiative proposed here has clear implications for policy related to entrepreneurship. Most directly, future research findings will have implications the development entrepreneurship education programs. Identifying action characteristics that are positively related to desirable entrepreneurial outcomes can inform education design and implementation such that it is appropriated aligned with teaching and training students to be proficient in the identified actions.

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Measuring and Understanding the Psychological Effects of Entrepreneurial Intentions: Multigroup Analysis

João J. Ferreira, Cristina I. Fernandes, and Mário L. Raposo

Abstract This study aims to measure and understand the psychological effects of entrepreneurial intentions among university students from two countries (Portugal and Spain).

Following a review of the literature, there is a lack of studies incorporating an integrative model that deploys self-efficacy, risk-taking propensity and proactive personality as psychological effects on entrepreneurial intentions. Here, we seek to meet this gap through proposing and developing an integrative psychological model about the formation of entrepreneurial intentions, including all these variables as the main preceding factors to entrepreneurial initiatives and their influence on entrepreneurial intentions. Taking a sample of 293 university students from both countries, we apply multigroup analysis to empirically test the influence these hold over the preferences expressed in terms of becoming an entrepreneur.

Our results reveal differences between these two countries regarding entrepreneurial intentions. In terms of the motivations present for launching a business, the higher these are, then the greater the preference for the option to work for third parties. In addition, and in terms of the perceived ease of launching a company variable, the higher this rises, the lower the level of preference for working for third party entities. Furthermore, the greater the level of perception in terms of the social value of entrepreneurship, the greater the preference in favour of becoming an entrepreneur.

Keywords Entrepreneurial intention • Entrepreneurial behaviour • Psychological traits • University students • Multigroup analysis

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1 Introduction

Audretsch (2007) proposes entrepreneurship as vital to the success of contemporary societies that are otherwise facing enormous economic and social challenges. Furthermore, entrepreneurs stand out as the leading driver of economic development as this is today understood. The majority of conceptions around this entrepreneurial figure (Knight 1921; Schumpeter 1934; Kirzner 1973) emphasise the role played in promoting the economy above and beyond the other, better understood roles such as business manager or property owner.

From the 1970s onwards, many Western countries have shared the same experience: the larger companies established there are no long able to provide for net increases in employment. This resulted in constantly high levels of unemployment and/or the growing relative importance of small and new businesses as the means to create new jobs (Aiginger and Tichy 1991; Davidsson et al. 1995). This sets out the broad backdrop to the great current political interest in the small and medium sized company sector and the generalised hopes and expectations that small and new companies may resolve the problem of unemployment and low economic growth.

Souitaris et al. (2007) maintain that education for entrepreneurship constitutes a source of entrepreneurial attitudes and implants in students the intention of becoming future entrepreneurs. Samydevan et al. (2015) argue that education reflects one of the fundamental factors contributing towards the attitudes of students in relation to entrepreneurship with the quality of business education susceptible of driving higher levels of business start-up intentions among students. Dyer (1994) suggests that entrepreneurial courses and programs bestow confidence and courage on their participants and their entrepreneurial intents. As there is a strong correlation between education for entrepreneurship and entrepreneurial intentions, many countries have correspondingly introduced education for entrepreneurship to raise the prevailing levels of entrepreneurial intent with Ahmad (2013) identifying how education for entrepreneurship may reduce unemployment among graduates.

However, this education for entrepreneurship needs embarking on at an age earlier than that for beginning university and with analysis on how the psychological and behavioural aspects might shape entrepreneurial intentions.

In past literature, some intention models have been developed and trying to explain entrepreneurial intentions as a variable within larger psychological models: behaviour theory (Ajzen 1991); self-efficacy and social learning theory (Bandura 1997); economic-psychological model (Davidsson 1995). However, there is a lack of studies applying an integrative model which employs self-efficacy, risk-taking propensity and proactive personality as psychological effects on entrepreneurial intentions. Here, we seek to fill this gap by developing an integrative psychological model about the formation of entrepreneurial intentions, including all these variables as the main preceding factors to entrepreneurial initiative and correspondingly evaluating their influence on entrepreneurial intentions.

2 Literature Review

Schumpeter (1934, 1939, 1942) defends how entrepreneurs represent the main driving force behind advancing economic development. Indeed, they are capable of coming up with the innovations that enable the return of profits while assuming the risks inherent to these "creations". According to this author, development equates to the introduction of new combinations of circular flows into economic life, thus entrepreneurs prove able to launch these innovative actions in such a fashion as to cause cyclical discontinuities in the economy. These combinations, when introduced by these new actors (the business owners), bring about new forms of production, new products, new technologies, new forms of organisation, new markets and new resources for their production processes and correspondingly defining economic development and the future of capitalism.

Entrepreneurship theory has advanced substantially over the last three decades (Samydevan et al. 2015). The main reason derives from the central role that the scientific community currently attributes to human capital and to the growth of different regions in the world economy (Wennekers and Thurik 1999; Galindo and Alvarez 2004). A large number of studies on the qualitative features of entrepreneurs have focused on the psychological characteristics and personality traits that differentiate the successful entrepreneurs from their less successful peers in addition to business managers in comparison with the rest of the population (Borland 1975; Samydevan et al. 2015).

Many authors have sought to identify the existence of certain personality characteristics that might be associated with entrepreneurial activities (McClelland 1961, 1985). Lumpkin and Erdogon (2004) studied and strongly backed the psychological attributes not only in terms of the importance of levels of perception and awareness but also as the theoretical foundation stone for predicting entrepreneurial behaviours and potentials when adults. According to Morris (1998), the risk taking propensity over entrepreneurial intentions refers to the extent to which individuals differ in their willingness to accept new situations when these are unknown. Koh (1996) affirms that entrepreneurs are prudent managers of risk. Timmons (1999), in turn, refers to the propensity of a person to assume risks under uncertain circumstances. Entrepreneurs therefore commonly get involved in risky behaviours and seem more willing to run risks (Norton and Moore 2002).

The relationship between self-efficacy and entrepreneurship is justified people avoid careers and environments which they believe exceed their capacities (without considering the benefits that they might obtain), and undertake careers for which they consider themselves able (Sánchez 2011). Correspondingly, Fig. 1 details our conceptual model.

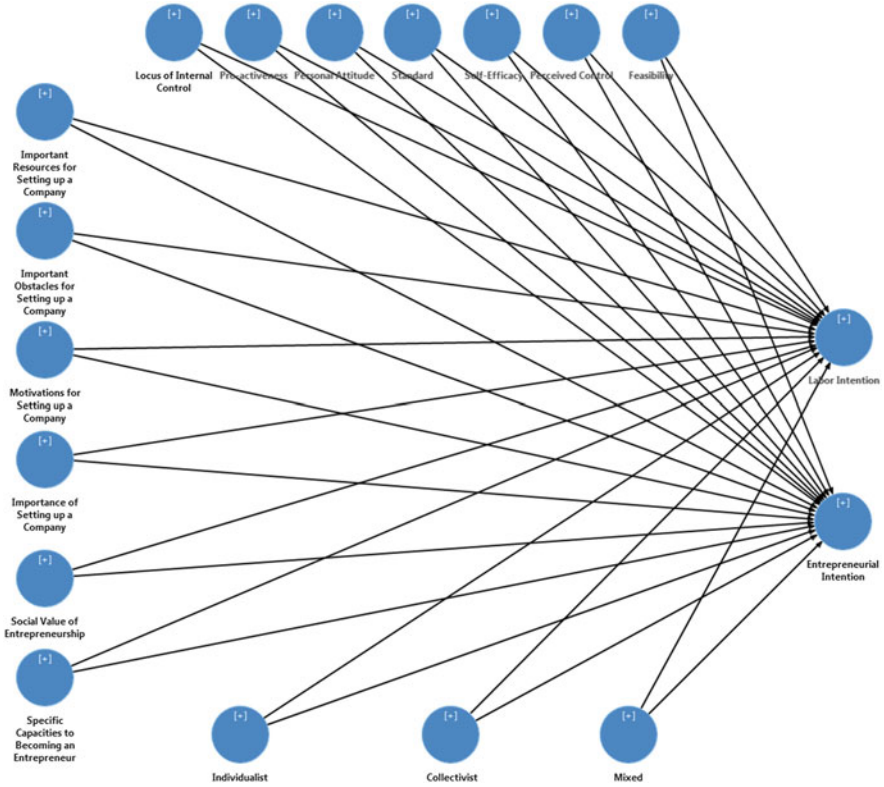

Fig. 1 Conceptual model

3 Methodology

3.1 Measuring Instruments

The instrument applied was the Sánchez (2010) Entrepreneurial Orientation Questionnaire (EOQ). The dimensions, measured by a Likert scale of 1–7 were the following (Ferreira and Fernandes 2017): Internal Locus of Control (11 items), Self-efficacy (9 items), Proactiveness (10 items), Personal Attitude (5 items), Perceived Control (6 items), Standard (3 items), Feasibility (9 items), Entrepreneurial Intention (9 items), Labor Intention (4 items), Motivations for Setting up a Company (10 items), Important Resources for Setting up a Company (13 items), Important Obstacles for Setting up a Company (10 items), Importance of Setting up a Company (8 items), Social Value of Entrepreneurship (8 items) and Specific Capacities to Becoming an Entrepreneur (6 items), Individualist (2 items), Collectivist (5 items) and Mixed (3 items).

3.2 Methods

Firstly it was evaluated the validity of the constructs, correspondingly analysing the reliability, the factorial validity, the convergent validity and the discriminant validity. In this research, construct validity was assessed by: (1) composite reliability (CR), (CR > 0.70); (2) factorial validity; (3) convergent validity (AVE > 0.50); and (4) discriminant validity (Hair et al. 2010; Hulland 1999).

Following the validation of the instrument and within the objective of validating the hypotheses incorporated into the conceptual model, we turned to structural equation modeling (SEM), estimated through the partial least squares method (PLS). The application of PLS-SEM as an alternative to SEM based on covariance (CB-SEM) stemmed from the high number of indicators included in the study and the limited size of the sample (n = 293), with more robust results obtained through PLS-SEM in such cases given fewer identification problems with smaller scale samples than those obtained through recourse to CB-SEM. Furthermore, another factor advocating the utilisation of PLS-SEM emerged from the existence of non-normal data and the assumptions of data distribution under CB-SEM (Hair et al. 2010, 2012).

As there are no overall fair adjustment measures for models estimated through PLS as in the covariance based structural equation methodologies, the evaluation of the structural models estimated through PLS takes place by analysis of the R^2 determined coefficient values for the endogenous constructs and the value of the Standardized Root Mean Residual (SRMR) (Hair et al. 2011; Hulland 1999). In order to evaluate the constructs potentially driving multicollinearity, the variance inflating factors (VIF) were subject to evaluation.

In estimating the structural models, for determining the t-statistics and the respective statistical significance, we deployed 1000 sample replicas.

Finally, we sought to analyse the differences in the parameters in relation to the two countries included in the sample (Spain and Portugal). To this end, we made recourse to multigroup analysis given that any differences might arise out of non-observed heterogeneity, thus not susceptible to attributing to any one or more pre-specified variables (Sarstedt et al. 2011). In order to determine the statistically significant differences between the path coefficients for the Portugal and Spain models, we applied Henseler's approach (Sarstedt et al. 2011).

For all of these statistical calculations, we applied the SmartPLS software version 3.0.

4 Results

Table 1 presents the results produced by the calculations of AVE, CR, VIF, the Pearson correlations between the constructs and the AVE squared root to evaluate the validity of the constructs and the multicollinearity between these and the

Table 1 Average variance extracts (AVE), composite reliability (CR), Variance inflating factors (VIF) and Pearson correlations between the constructs (in the diagonal with the *bold* figure detailing the AVE squared root)

	Construct	AVE	CR	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Collectivist	0.561	0.789	1.860	**0.749**																	
2	Entrepreneurial intention	0.719	0.953		0.414	**0.848**																
3	Feasibility	0.545	0.920	5.050	0.404	0.832	**0.738**															
4	Importance of setting up a company	0.568	0.839	1.588	0.266	0.268	0.271	**0.754**														
5	Important obstacles for setting up a company	0.529	0.763	1.234	0.057	−0.131	−0.135	0.240	**0.727**													
6	Important resources for setting up a company	0.543	0.855	1.573	0.357	0.242	0.311	0.444	0.113	**0.737**												
7	Individualist	0.584	0.709	1.258	−0.033	0.279	0.230	0.125	−0.069	0.076	**0.764**											
8	Labor intention	0.551	0.743		0.077	−0.215	−0.124	0.025	0.242	−0.001	0.008	**0.742**										
9	Locus of internal control	0.530	0.899	1.896	0.403	0.368	0.369	0.155	−0.084	0.271	0.098	0.027	**0.728**									
10	Mixed	0.541	0.702	1.288	−0.293	−0.186	−0.234	−0.297	−0.049	−0.292	−0.186	−0.102	−0.237	**0.736**								
11	Motivations for setting up a company	0.543	0.892	1.856	0.419	0.442	0.514	0.456	0.198	0.367	−0.003	0.053	0.193	−0.228	**0.737**							
12	Perceived control	0.718	0.938	3.454	0.384	0.733	0.722	0.224	−0.166	0.293	0.265	−0.098	0.375	−0.156	0.387	**0.847**						
13	Personal attitude	0.728	0.929	2.968	0.394	0.759	0.701	0.221	−0.012	0.295	0.255	−0.099	0.343	−0.191	0.460	0.656	**0.853**					
14	Pro-activeness	0.514	0.894	2.933	0.539	0.499	0.465	0.218	−0.053	0.441	0.195	−0.091	0.644	−0.270	0.326	0.514	0.487	**0.717**				
15	Self-efficacy	0.521	0.907	3.413	0.497	0.602	0.615	0.268	−0.037	0.409	0.204	−0.018	0.592	−0.300	0.373	0.653	0.614	0.720	**0.722**			
16	Social value of entrepreneurship	0.628	0.869	1.516	0.289	0.540	0.491	0.285	0.002	0.156	0.223	−0.015	0.224	−0.158	0.308	0.469	0.373	0.329	0.354	**0.792**		
17	Specific capacities to becoming an entrepreneur	0.593	0.897	2.695	0.576	0.608	0.584	0.211	−0.088	0.329	0.136	0.073	0.506	−0.183	0.389	0.605	0.547	0.631	0.700	0.420	**0.770**	
18	Standard	0.723	0.887	1.284	0.153	0.298	0.396	0.185	0.007	0.218	0.182	−0.030	0.166	−0.203	0.257	0.296	0.292	0.169	0.249	0.290	0.151	**0.850**

estimates returned for SEM. All of the constructs utilised report acceptable levels of reliability (FC $\geq$ 0.709). Regarding their validity, the standardised factorial loads were equal to or greater than 0.530, thus correspondingly attaining factorial validity, the AVE results were greater than or equal to 0.529 and with the squared roots also always higher than the correlation returned between the respective construct and the remainder and therefore conclusively confirming both the convergent and the discriminant validity.

4.1 Structural Equation Modeling

The VIF values were below or equal to 5.05 thus reporting the absence of multicollinearity in the estimations made. The SEM based modeling returned an acceptable level of adjustment given that the SMRM = 0.062 and the R^2 results were 0.770 and 0.160 for the endogenous constructs Entrepreneurial Intention and Labor Intention respectively.

Table 2 and Fig. 2 detail the results stemming from the estimated structural model. This thus conveys how the Feasibility ($\beta = 0.45$; $p < 0.001$), Personal Attitude ($\beta = 0.25$; $p < 0.001$) and Social Value of Entrepreneurship ($\beta = 0.14$; $p < 0.001$) constructs generate a statistically significant impact on the construct Entrepreneurial Intention in which the higher the score for the Feasibility, Personal Attitude and Social Value of Entrepreneurship constructs, the higher the score of the Entrepreneurial Intention construct. Regarding the Labor Intention construct, the Feasibility ($\beta = -0.21$; $p = 0.042$), Important Obstacles for Setting up a Company ($\beta = 0.24$; $p < 0.001$), Pro-activeness ($\beta = -0.32$; $p = 0.001$) and Specific Capacities to Becoming an Entrepreneur ($\beta = 0.29$; $p = 0.003$) all generate a statistically significant effect. In this case, the higher the scores for the Feasibility and Pro-activeness constructs, the lower the score for the Labor Intention construct and the higher the score for the Important Obstacles for Setting up a Company and Specific Capacities to Becoming an Entrepreneur constructs, the higher the scores for the Labor Intention construct.

4.2 Multigroup Analysis

Finally, multigroup analysis served to test for statistically significant differences between these two countries in relation to their respective standardized path coefficients. Table 3 (Entrepreneurship intentions) and Table 4 (Labour intentions) summarise the analytical results.

In terms of entrepreneurial intensity (Table 3), in the Portuguese sample, the constructs generating a statistically significant positive impact on entrepreneurial intention are the following: Feasibility ($\beta = 0.53$; $p < 0.001$), Personal Attitude ($\beta = 0.15$; $p = 0.045$), Social Value of Entrepreneurship ($\beta = 0.21$; $p < 0.001$) and

Table 2 Standardized path coefficients of estimated SEM and standardized coefficients, standard error, T statistics and p-value of bootstraping estimation

	Entrepreneurial intention ($R^2 = 0.770$)					Labor intention ($R^2 = 0.160$)				
	Original sample	Sample mean	Standard error	T statistics	p	Original sample	Sample mean	Standard error	T statistics	p
Collectivist	0.03	0.03	0.05	0.70	0.488	0.08	0.07	0.08	1.02	0.310
Feasibility	0.45	0.45	0.07	6.31	0.000**	−0.21	−0.21	0.10	1.98	0.042*
Importance of setting up a company	0.06	0.06	0.04	1.46	0.145	−0.08	−0.09	0.10	0.82	0.411
Important obstacles for setting up a company	−0.05	−0.05	0.03	1.47	0.143	0.23	0.24	0.06	3.81	0.000**
Important resources for setting up a company	−0.08	−0.07	0.04	1.82	0.070	0.00	0.00	0.10	0.01	0.994
Individualist	0.05	0.05	0.04	1.24	0.215	0.09	0.08	0.11	0.87	0.383
Locus of internal control	−0.01	−0.01	0.04	0.18	0.855	0.13	0.13	0.09	1.50	0.133
Mixed	0.03	0.02	0.04	0.78	0.437	−0.12	−0.12	0.08	1.46	0.144
Motivations for setting up a company	0.00	0.00	0.04	0.07	0.944	0.10	0.09	0.08	1.15	0.252
Perceived control	0.06	0.07	0.06	1.13	0.261	0.01	0.02	0.12	0.13	0.900
Personal attitude	0.25	0.25	0.06	4.37	0.000**	−0.10	−0.09	0.10	1.02	0.308
Pro-activeness	0.05	0.05	0.06	0.91	0.365	−0.33	−0.32	0.10	3.29	0.001**
Self-efficacy	0.00	0.00	0.06	0.01	0.991	0.02	0.02	0.11	0.19	0.852
Social value of entrepreneurship	0.14	0.14	0.04	3.58	0.000**	0.00	0.00	0.07	0.01	0.995
Specific capacities to becoming an entrepreneur	0.08	0.08	0.05	1.54	0.124	0.29	0.29	0.09	3.04	0.003**
Standard	−0.03	−0.03	0.03	1.08	0.281	0.00	0.00	0.06	0.00	0.999

*$p < 0.05$; **$p < 0.01$

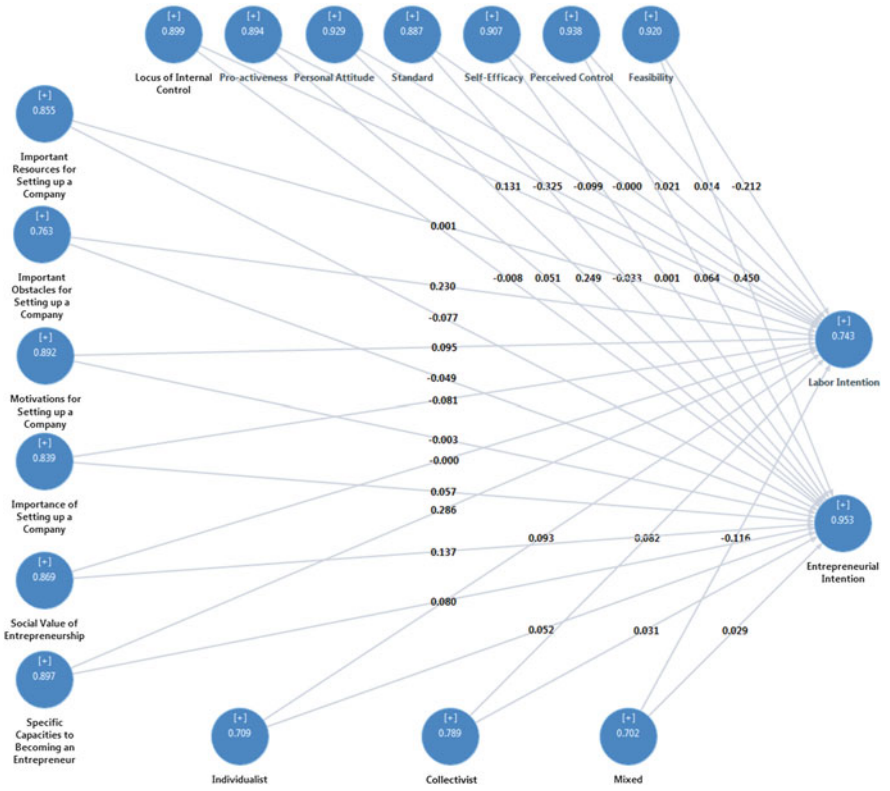

Fig. 2 Standardized SEM estimated path coefficients

Pro-activeness ($\beta = -0.19$; $p = 0.009$). As regards the Spanish student group, the constructs with a statistically significant positive impact on entrepreneurial intention are Feasibility ($\beta = 0.37$; $p < 0.001$), Importance of Setting up a Company ($\beta = 0.21$; $p = 0.009$), Perceived Control ($\beta = 0.16$; $p = 0.034$), Personal Attitude ($\beta = 0.25$; $p = 0.001$), Social Value of Entrepreneurship ($\beta = 0.21$; $p < 0.001$) and Pro-activeness ($\beta = 0.20$; $p = 0.005$).

As regards labour intention (Table 4), in the Portuguese student sample, the Pro-activeness ($\beta = 0.245$; $p = 0.009$) construct returns a statistically significant negative impact while in the Spanish students group Feasibility ($\beta = -0.15$; $p < 0.001$) returns a statistically significant impact on labour intention.

Table 5 conveys the summary results for the comparison of the Path Coefficients estimated between Spain and Portugal. In terms of entrepreneurial intention, there are statistically significant differences between the Path Coefficients for the constructs of Self-efficacy and Social Value of Entrepreneurship, with these values proving significantly higher among Portuguese students. As regards labour intention, we may report that the Feasibility construct had a far higher statistically significant negative impact on the Spanish students than on their Portuguese counterparts.

Table 3 Entrepreneurship intention: Standardized path coefficients of estimated SEM and standardized coefficients, standard error, T statistics and p-value of bootstraping estimation, by country

	Portugal ($R^2 = 0.799$)					Spain ($R^2 = 0.789$)				
	Original sample	Sample mean	Standard error	T statistics	p	Original sample	Sample mean	Standard error	T statistics	p
Collectivist	0.08	0.09	0.07	1.26	0.210	−0.03	−0.02	0.07	0.47	0.639
Feasibility	0.53	0.54	0.10	5.22	0.000**	0.37	0.37	0.09	4.32	0.000**
Importance of setting up a company	−0.02	0.00	0.05	0.43	0.665	0.21	0.18	0.08	2.61	0.009**
Important obstacles for setting up a company	−0.03	−0.05	0.05	0.54	0.593	0.07	0.06	0.06	1.18	0.238
Important resources for setting up a company	−0.09	−0.10	0.09	0.96	0.335	−0.12	−0.06	0.08	1.58	0.115
Individualist	0.02	0.05	0.05	0.33	0.743	0.09	0.07	0.06	1.52	0.130
Locus of internal control	0.06	0.07	0.07	0.88	0.381	−0.03	−0.03	0.06	0.50	0.618
Mixed	−0.04	−0.03	0.05	0.96	0.338	0.04	0.04	0.06	0.62	0.538
Motivations for setting up a company	−0.11	−0.08	0.06	1.69	0.093	0.09	0.09	0.06	1.53	0.126
Perceived control	0.01	−0.01	0.08	0.09	0.925	0.16	0.15	0.07	2.13	0.034*
Personal attitude	0.15	0.13	0.07	2.01	0.045*	0.25	0.25	0.07	3.41	0.001**
Pro-activeness	0.19	0.15	0.07	2.63	0.009**	0.20	0.19	0.07	2.81	0.005**
Self-efficacy	0.15	0.12	0.08	1.90	0.058	−0.08	−0.08	0.08	1.02	0.308
Social value of entrepreneurship	0.21	0.20	0.05	3.83	0.000**	0.06	0.08	0.06	1.02	0.308
Specific capacities to becoming an entrepreneur	0.15	0.14	0.09	1.66	0.098	−0.01	−0.02	0.07	0.13	0.898
Standard	−0.01	−0.03	0.04	0.15	0.884	−0.03	−0.04	0.05	0.62	0.537

*$p < 0.05$; **$p < 0.01$

Table 4 Labor intention: Standardized path coefficients of estimated SEM and standardized coefficients, standard error, T statistics and p-value of bootstraping estimation, by country

	Portugal ($R^2 = 0.575$)					Spain ($R^2 = 0.530$)				
	Original sample	Sample mean	Standard error	T statistics	p	Original sample	Sample mean	Standard error	T statistics	p
Collectivist	0.15	0.11	0.14	1.10	0.270	0.04	0.02	0.11	0.35	0.725
Feasibility	0.54	0.35	0.33	1.62	0.105	0.34	−0.26	0.15	2.32	0.021*
Importance of setting up a company	−0.12	−0.05	0.12	1.00	0.320	0.13	0.12	0.10	1.29	0.198
Important obstacles for setting up a company	0.13	0.03	0.13	0.94	0.349	0.13	0.10	0.15	0.85	0.395
Important resources for setting up a company	−0.01	0.00	0.18	0.07	0.948	−0.05	−0.02	0.14	0.40	0.691
Individualist	0.02	0.02	0.22	0.11	0.914	0.05	0.02	0.08	0.61	0.542
Locus of internal control	0.04	0.03	0.13	0.35	0.726	0.03	0.02	0.14	0.18	0.859
Mixed	0.04	0.01	0.12	0.34	0.734	−0.05	−0.06	0.11	0.49	0.622
Motivations for setting up a company	0.01	0.00	0.21	0.04	0.970	0.03	0.04	0.09	0.29	0.773
Perceived control	−0.09	−0.06	0.16	0.53	0.597	0.02	0.01	0.11	0.15	0.878
Personal attitude	0.15	0.08	0.14	1.08	0.282	0.24	0.20	0.14	1.69	0.092
Pro-activeness	−0.45	−0.25	0.18	2.52	0.012*	0.17	0.20	0.17	1.04	0.298
Self-efficacy	0.26	0.13	0.16	1.67	0.096	−0.10	−0.10	0.11	0.96	0.338
Social value of entrepreneurship	0.00	0.02	0.10	0.02	0.988	0.03	0.04	0.09	0.34	0.737
Specific capacities to becoming an entrepreneur	0.19	0.09	0.22	0.88	0.380	0.01	−0.03	0.14	0.06	0.953
Standard	0.03	0.01	0.12	0.24	0.809	0.16	0.13	0.08	2.03	0.043*

*$p < 0.05$

Table 5 Henseler's multigroup analysis

	Entrepreneurship intention		Labor intention	
	Path coefficients diff (| Portugal—Spain |)	p (Portugal vs. Spain)	Path coefficients diff (| Portugal—Spain |)	p (Portugal vs. Spain)
Collectivist	0.12	0.115	0.11	0.251
Feasibility	0.16	0.114	0.80	0.005**
Importance of setting up a company	−0.23	0.982	−0.25	0.943
Important obstacles for setting up a company	−0.10	0.893	0.00	0.535
Important resources for setting up a company	0.03	0.386	0.04	0.403
Individualist	−0.07	0.825	−0.03	0.529
Locus of internal control	0.10	0.162	0.02	0.475
Mixed	−0.08	0.863	0.10	0.284
Motivations for setting up a company	−0.20	0.987	−0.02	0.528
Perceived control	−0.15	0.925	−0.10	0.707
Personal attitude	−0.10	0.835	−0.09	0.673
Pro-activeness	−0.01	1.000	−0.63	0.990
Self-efficacy	0.23	0.018*	0.37	0.028*
Social value of entrepreneurship	0.15	0.033*	−0.03	0.601
Specific capacities to becoming an entrepreneur	0.16	0.088	0.18	0.236
Standard	0.02	0.357	−0.14	0.832

*$p < 0.05$; **$p < 0.01$

5 Final Considerations

The literature review posits that entrepreneurs display certain essential attributes or psychological characteristics and that, in turn, these produce specific personality traits (Samydevan et al. 2015). The need to achieve, a tolerance of ambiguity, the assumption of risks and the locus of control were subject to analysis in relation to entrepreneurial characteristics and furthermore identified as duly correlating with being or wishing to be an entrepreneur.

This approach recognises, as suggested by Ferreira and Fernandes (2017), the essential need to study the contextual variables, the personal and social factors that affect business intentions in persons, especially in university students given the

position these institutions hold in the creation of knowledge and the necessity for such knowledge to reach the market and be positioned in the service of society.

This study therefore chose to study the explanatory variables for entrepreneurial intention based on the psychological traits, motivations and individual and collective values of university students. To this end, we selected a sample of students attending Portuguese and Spanish universities in order to also evaluate the differences prevailing in these respective international ambiences.

The results, on the one hand, demonstrate the influence of the different explanatory variables used to predict and explain entrepreneurial intentions among university students. On the other hand, this also reported the existence of statistically significant differences between Portuguese and Spanish students.

As regards the psychological variables, we may report significant differences between these two countries across the variables Locus of Internal Control, Self-efficacy, Proactiveness, Personal Attitude, Perceived Control and Viability. In all of these cases, the Portuguese students return higher levels of results. For the different motivations around embarking on business activities, we may report the existence of significant differences in the constructs applied and identifying how Portuguese students return significantly higher levels across all constructs with the exception of Labor Intention, in which the Spanish students attain a higher value. In relation to the individual values, we once again encountered statistically significant differences between the constructs for Stimulation, Effort and Individualist and correspondingly reporting that the Portuguese students obtained significantly higher rankings in these constructs.

Portuguese students express lower levels of preference over working for third parties. In relation to the factors influencing preferences over becoming entrepreneurs, the Portuguese student sample reported a significantly higher option over becoming entrepreneurs. The main contributions of this paper stem from the results of its empirical attempt to complement the existing, mainly conceptual, literature on the role of psychological approaches in explaining entrepreneurial intentions. These results may generate a significant impact upon the knowledge about how psychological theory contributes towards understanding entrepreneurial intentions. This study has also demonstrated the feasibility of measuring and understanding the psychological effects on entrepreneurial intention in university students and furthermore able to take into account a number of other influences on the entrepreneurial intentions of these students within different national contexts.

Our research model might be further improved by eliminating some constructs that proved to be non-significant and a number of additional constructs could certainly be introduced by wider application during further research. We would propose future research develops a more coherent multidimensional construct for entrepreneurial intention. We correspondingly suggest extending this methodology to other samples (countries) in order to evaluate what are the most important psychological dimensions explaining the respective entrepreneurial intentions as well as analyse in a deeply way some potential differences in terms of culture aspects.

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Why Would You Ever Want to Become An Academic Entrepreneur?

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Abstract In this chapter, we explore the underlying motivations of researchers that lead to entrepreneurial activities in Academia. Existing literature in the specific field of academic entrepreneurship has mainly studied the infrastructures and policies aimed at fostering spin-off and patent creation at the university level. However, few studies have concentrated on the individual level. We posit that researchers' motivation is the critical cornerstone for entrepreneurship activities to flourish.

Our study, therefore, contributes to the previous literature by scrutinizing the relationship between individual characteristics of the entrepreneur and intrinsic, extrinsic and prosocial motivations on entrepreneurial outcomes that can take place in the academic setting. Results indicate that extrinsic motivations relative to rewards do shape researchers' interest for entrepreneurship.

Keywords Academic entrepreneurship • Intrinsic motivation • Extrinsic motivation • Prosocial motivation • Spin-offs • Entrepreneurial behaviour

1 Introduction

In the last decades, entrepreneurship has become a fruitful field of study. Fostered by the economic crisis started in 2008, entrepreneurship interest has grown as it is seen as a way to invigorate the economy, enhance innovation and create jobs. Entrepreneurs, as the agents that identify and exploit new opportunities (Shane and Venkataraman 2000) play a critical role in the active development of entrepreneurial initiatives. Most research about entrepreneurs focuses on business entrepreneurs although most recently, social entrepreneurs have received also a great deal of

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attention (Mair and Noboa 2006). Still, entrepreneurs in certain areas such as political entrepreneurs or academic entrepreneurs remain underrepresented.

Academic entrepreneurship takes place when researchers, professors or university personnel engage in entrepreneurial behaviour. Traditionally, this behaviour has been operationalized in the form of spin-offs. Nevertheless, entrepreneurial behaviour in the academic arena embraces a wider range of activities like consultancy, university-industry contracts, and patent licensing among others.

In line with the social interest on entrepreneurship, since the 2000s universities have increasingly incorporated to their traditional two main missions, teaching and research, a third one, that of knowledge transfer and innovation (Gunasekara 2006). Universities try to have an entrepreneurial spirit by increasing their interaction with industry, developing impactful R&D projects and creating spin-offs, among other initiatives. Many factors determine the degree of achievement of this third mission. Contextual factors like country specific policies, culture, university rules or structure, as well as individual factors shape the researcher's willingness to engage in entrepreneurial behaviour.

But in the same manner that not all universities have a favourable regulatory environment to foster entrepreneurship, also not all researchers have the same aspirations and willingness to embark in entrepreneurial activities. In this chapter we want to explore the individual factors that play a role in researchers' entrepreneurial behaviour. These factors include intrinsic motivations, extrinsic motivation, prosocial motivations and the profile of the researchers (career stage, previous business experience, research area, etc.).

The objective of this chapter is therefore, to investigate which of the above mentioned factors have a relevant impact on researchers' entrepreneurial behaviour. Entrepreneurial behaviour can be operationalized in different ways but we have chosen to concentrate on spin-off creation. Spin-offs are new ventures that are dependent upon licensing or assignment of the university's intellectual property for initiation (Association of University Technology Managers in the US, AUTM). Spin-offs are one of the most popular knowledge transfer mechanisms of universities and are frequently the result of product development, industry collaborations or patent filling. In some sense, spin-offs are frequently the final result of a long process of innovation and entrepreneurial effort.

The stimulation of academic entrepreneurship has become a critical issue for both universities and governments. The rise in the number of academic spin-offs, especially in European countries (Mustar et al. 2006) seems to be accelerated by a combination of circumstances. First, there is a social pressure to commercialise research in order to generate a new revenue stream that helps foster regional economic growth (Clarysse et al. 2007). Second, technology transfer activities might help reduce the so-called financial and knowledge gap (Wright et al. 2008). Last, but not least, in the last years we have witnessed a rise in the number of policies that aim at stimulating the creation and development of spin-offs at universities. Likewise, institutional programs have been launched providing business assistance and the access to resources and facilities at low costs (Jacob et al. 2003). The underlying rationale behind all these initiatives mirrors the willingness

of European countries to boost the creation of profitable high-tech firms (Dosi et al. 2006), comparable with those in the US.

Policies and institutional programs, though, need to be accompanied by the willingness of university professors and researchers to engage in entrepreneurial behaviour. To that end, this chapter explores which individual motivational factors influence spin-off creation. It does so by first, reviewing the concepts of intrinsic, extrinsic and prosocial motivation. Then, by presenting the data and method of the study and finally, presenting the main results and conclusions.

2 Motivational Factors that Shape the Academic Entrepreneur

Although there is a bulk of studies focusing on the role of institutions as determinants of academic entrepreneurship, there are only a few that consider the individual factors that underline entrepreneurial decisions among academics (Clarysse et al. 2011). In order to better understand academic entrepreneurship, it is crucial to look at the factors that lead scientists engage in this kind of activities (Jain et al. 2009). In this context, it is of utmost importance to contemplate not only individual characteristics but also academic motivations to become an entrepreneur (Hayter 2015; Ryan 2014). Such motivations can be classified into three main categories: intrinsic, extrinsic, and prosocial.

Intrinsic motivations are linked to the satisfaction that the individual experiences as a result of the execution of a particular task. This implies that, from the researchers' perspective, the reward is not in the result obtained with the activity but in the activity itself (Ryan and Deci 2000). In the university context, researchers' intrinsic motivations have been acknowledged as decisive (Lounsbury et al. 2012). Academics are often more motivated by the stimulation of the work itself than by the remuneration they will obtain. Examples of intrinsic motivation are the capability to successfully accomplish the task, the independence perceived, the increase of self-esteem experienced by performing the activity (Fullwood et al. 2013) and the sense of control and pleasure due to the congeniality of colleagues and the work setting, which favours undertaking a stimulating work and broadening the knowledge (Bellamy et al. 2003), or the discovery of new opportunities for future research (Baldini et al. 2007). All these non-monetary benefits commonly referred in the literature as "a high taste for science" (Agarwal and Ohyama 2013) constitute the intrinsic motivations.

On the other hand, extrinsic motivations refer to performing an activity because of its instrumental value. Therefore, extrinsic motivations comprise the external incentives, which can be professional or personal, that researchers perceive in order to accomplish their tasks. These incentives can be in the form of monetary compensations (Ryan and Deci 2000) or research support or access to new infrastructures, among others. In this setting it is worth noting that some universities also link

researchers' participation in entrepreneurial activities to their promotion. Moreover, in general terms researchers highly appreciate the reputation and prestige derived from academic entrepreneurship, as it increases their visibility and market value (Franco and Haase 2015; Welsh et al. 2016). All these aspects can translate in obtaining additional funds for new research and increase the researchers' likelihood to access grants for future projects (Baldini et al. 2007). Based on the aforementioned considerations, we conclude that external motivations act as an important driver of academic entrepreneurship.

Another determinant that might shape academics' interest for entrepreneurial activities that should not be obviated is prosocial motivation. This sort of motivation embraces the desire to look for and nourish others' well-being. In this sense, individuals are guided by prosocial motivations when their actions pursue others' benefits, being their objective "distinct from altruism and independent of self-interested motivations" (Grant and Berg 2012, p. 1). In this context, Batson et al. (2008) assert that individuals help others for four main reasons: (1) egoism—"benefiting another as a means to benefit oneself"—, (2) altruism—"benefiting another as an ultimate goal"—, (3) collectivism—"benefiting another to benefit a group"—, and (4) principlism—"benefiting another to uphold a moral principle"—. According to these authors, prosocial motivations can be formed by any combination of these four different ultimate goals.

3 Data and Method

3.1 Data and Measures

The dependent variable is the natural count of the number of spin-offs created by the researcher in the last 5 years (2010–2014). Data come from a survey that was intentionally designed for this study. The structure was as follows. In the first section respondents were asked about their background and socio-demographic aspects. Sample questions include years in academia, previous experience in the business sector, the research area, the contract type and the highest level of studies reached. Next, we investigated their level of involvement in entrepreneurial activities, namely, participation in university-industry R&D contracts, patents granted and spin-offs created. Specifically, we asked for the total amount of the aforementioned outputs for the past 5 years (period 2010–2104). We also asked respondents if they usually take advantage of the services offered by the technology transfer office (TTO).

In the third section, a list of 19 items was included (see Table 1). Given the limited number of studies analysing the motivations behind engaging in academic entrepreneurship, the items were adapted from the questionnaires developed by Fullwood et al. (2013) and Chong et al. (2014), both focused in knowledge sharing and technology transfer activities. Based on the literature review, these items were

Table 1 Items to assess lecturer's motivations to engage in entrepreneurial initiatives

Dimension	Item	Description
Intrinsic motivations	IM1	I get challenge from participating in entrepreneurial activities
	IM2	By conducting entrepreneurial activities I have a feeling of satisfaction
	IM3	Participating in entrepreneurial activities improves my sense of self worth
	IM4	I enjoy sharing my knowledge
	IM5	Entrepreneurial initiatives are a valuable experience
	IM6	Participating in entrepreneurial activities is a wise move
	IM7	I am willing to engage in entrepreneurial initiatives
Extrinsic motivation	EM1	I am more likely to promote internally if I engage in entrepreneurial initiatives
	EM2	I am more likely to be considered for appointments in other universities if I engage in entrepreneurial initiatives
	EM3	I will receive additional points for promotion in return for my involvement in entrepreneurial initiatives
	EM4	I will be rewarded in return for engaging in entrepreneurial initiatives
	EM5	Participation in entrepreneurial activities helps strengthening the ties with researchers/professional from outside my university
	EM6	Participation in entrepreneurial activities helps strengthening the ties with researchers/professional from my university
	EM7	The likelihood of being considered for future research contracts and projects or being awarded with grants increases if I engage in entrepreneurial initiatives
	EM8	Participation in entrepreneurial activities increases the likelihood of accessing new equipment, resources and infrastructures
Prosocial motivation	PRO1	Entrepreneurial initiatives create new opportunities for the university
	PRO2	By participating in entrepreneurial activities, the productivity of the university increases
	PRO3	My knowledge sharing through entrepreneurial activities help the university achieve its performance objectives
	PRO4	Entrepreneurial activities are important for success and growth

grouped into 3 dimensions and aimed at capturing researchers' motivations (intrinsic, extrinsic and prosocial) with regard conducting entrepreneurial activities. All items were presented as statements to which respondents should indicated their agreement/disagreement on a five-point Likert-type scale (from 1 = strongly disagree, to 5 = strongly agree). Items in the scales were originally in English. A back translation process ensured the quality of the measurements (Brislin et al. 1973).

In order to avoid misinterpretations and ensure that questions were unequivocally formulated, a panel of three experts in the field of entrepreneurship double-checked the questionnaire. Once ready, the survey was sent by email to all faculty members working at Universitat Politècnica de Catalunya. 508 surveys were collected, 292 of them fully completed. Table 2 shows the characteristics of the 292 respondents.

Table 2 Characteristics of the sample

Characteristics		Number	Percentage
Gender	Female	63	21.58
	Male	229	78.42
Age	Under 30 years	11	3.77
	Between 30 and 39 years	59	20.21
	Between 40 and 49 years	76	26.03
	Between 50 and 59 years	104	35.62
	60 years or above	42	14.38
Study level	Researchers holding a PhD	240	82.19
	Researchers not holding a PhD	52	17.81
Contract type	Permanent contract	204	69.86
	Fixed-term contract	88	30.14
Research area	Science, engineering, technology and mathematics (STEM)	240	82.19
	Medicine and health	52	17.81
Business experience	Yes	162	55.48
	No	130	44.52

Spinning-off is an activity that needs coaching, an appropriate assessment and the stimulation of an entrepreneurial spirit. In our approach, we include a dummy variable (TTO use) to control for those researchers that asked the TTO for assistance. As shown in Table 3, half of the respondents used these services.

We also differentiate by contract type. In the Spanish public university sector, internal promotion policies are strictly conditioned to an accreditation system where governmental agencies play a key role. In this process an external panel evaluates the credentials merits of the candidate. A positive evaluation makes the applicant valid for potential promotion.

According to the current regulation, participation in technology transfer activities—such as creating a venture—has a small impact in this evaluation process. Specifically, its weight in the overall evaluation ranges between 2% and 12% (based on the research field). This percentage is very low compared to the weight given to scientific publications (between 26% and 35%). Given these differences, we argue that for young academics—usually with a fixed-term contract—to carve out an academic career is a long-distance race conditioned, to a great extent, to their capacity to publish their research. To the contrary, full professors—who enjoy the benefits of a permanent contract—have no exogenous pressure for publishing and therefore, may have the time and motivation to engage in entrepreneurial activities.

Previous experience in business and research might also play a relevant role. We use three variables to account for this effect. First, accumulated experience in the business sector might also lead to the creation of knowledge spill overs that are

Table 3 Descriptive statistics

Variable	Mean	Std. dev.	Min	Max
Spinoffs	0.0959	0.3174	0	2
Use of TTO	0.5068	0.5008	0	1
Contract type	0.6986	0.4596	0	1
Business experience	0.5548	0.4978	0	1
Patents	0.4760	1.4321	0	18
Research contracts	1.7500	3.0868	0	26
Intrinsic motivation	−4.40E−09	2.1112	−3.8596	9.2375
Prosocial motivation	−4.57E−09	1.7176	−2.4448	7.4004
Extrinsic motivation (promotion)	3.00E−09	1.6514	−3.0511	4.2240
Extrinsic motivation (rewards)	4.11E−09	1.5240	−3.4008	5.6730

expected to boost the creation of new spin-offs. One way to account for this experience is including a dummy variable that indicates whether the research has previous experience in the business sector or not (before joining academia).

Second, university spin-offs are the natural result of the valorisation of research outcomes. There are two main paths leading to spin-off creation. The first one entails a preliminary phase, where the invention is protected with a patent. This step allows safeguarding the rights and potential benefits derived from the invention (Powers and McDougall 2005). Once the patent is granted researchers start working on the commercialization process. They do so through the establishment of a new venture. Although this pathway might seem attractive due to cost reductions (Clarysse et al. 2007), there is no empirical evidence that the invention will succeed in the marketplace. Contrarily, the alternative mechanism for creating a spin-off is the one where there is no need to neither disclose the technology nor apply for a patent. This latter approach is riskier than the former one, particularly in high-tech sectors. Therefore, university spin-offs tend to follow the first approach (Di Gregorio and Shane 2003). Moreover, some studies indicate that patents are predictive of firm performance, that is, university patenting stimulates future patent activity and consequently the creation of more spin-offs (Mowery et al. 2002; Roig-Tierno et al. 2017). Given all these considerations, we include as an explanatory variable the number of patents granted (past 5 years).

Similarly, university-industry partnerships in the form of research contracts are another valuable experience that might conduce to new venture creation. Researchers need the industry's knowledge of the market to come up with new, applicable, and successful technology developments (Ribeiro-Soriano and Urbano 2010). Furthermore, through R&D contracts they gain additional funding support, which is fundamental to safeguarding the viability of future research endeavours (Baba et al. 2009; Lai 2011). Accordingly, we include a variable that accounts for these collaborative agreements.

3.2 Method

The empirical analysis consists of a two-step process. First, we performed a principal component analysis to group the items from the questionnaire that refer to motivations. Although a priori, questions seem to be easily grouped into three dimensions (intrinsic, extrinsic and prosocial motivations), we decided to run a factor analysis in order to first eliminate any potential multicollinearity problems and, second, to adjust the model to the sample and extract the maximum variance from the data.

A principal component factor analysis was performed. Kaise-Meyer-Olkin value tests the adequacy of the factor analysis methodology as a sampling methodology (KLM value = 0.898 at a significant of >0.000). Retaining only those factors whose eigenvalues exceed a specified value (>1), the exploratory factor analysis yielded four factors explaining 65.56% of the variance. Next, we analysed the items included in each factor. We used an orthogonal rotation method (varimax) which guarantees that factors are not correlated, and thus, problems of multicollinearity are avoided. Results are presented in Table 4.

Following our initial intuition, items were grouped as expected. The only exception is for the extrinsic motivations. This dimension was divided into two, distinguishing between promotion incentives (items from EM1 to EM3) and reputation, rewards and access to resources (items from EM4 to EM5). To examine the

Table 4 Matrix of the four components extracted using the principal component analysis and the varimax rotation (loadings > 0.3)

Item	1	2	3	4
IM1	0.3623			
IM2	0.3870			
IM3	0.3641			
IM4	0.3580			
IM5	0.4153			
IM6	0.3186			
IM7	0.3259			
EM1			0.5696	
EM2			0.5228	
EM3			0.5611	
EM4				0.3333
EM5				0.4389
EM6				0.4664
EM7				0.3742
EM8				0.5493
PRO1		0.4439		
PRO2		0.5346		
PRO3		0.5266		
PRO4		0.3431		
Percentage of variance extracted	39.34%	13.17%	7.32%	5.73%

unidimensionality of the multi-item factors, we ran four exploratory factor analyses one for each of the factors. In all cases the analyses extracted only one factor, corroborating that our approach was sound.

In the second stage, we explored the explanatory power of the different dimensions and variables outlined above when regressed against the number of spin-offs. Due to the highly skewed distribution of the dependent variable (Greene 2008) we use a negative binomial regression technique. Three models were run to ensure the robustness of the results. First, we only introduced the control variables (use of TTO and contract type). In the second model we added the variables that refer to previous business and research experience (business experience, patents and R&D contracts). The third model is the full model, which includes the four motivational factors identified in the previous step.

4 Results and Discussion

Results are displayed in Table 5. As it can be shown, intrinsic motivations have no effect on the output. This result indicates that main drivers for starting-up a business does not refer to the joy of creating something new or learning from a new

Table 5 Regression results

	(1)	(2)	(3)
Use of TTO	2.05223*** (0.5853)	1.8239*** (0.6057)	1.7127*** (0.6095)
Contract type	0.1645 (0.4610)	0.3860 (0.5239)	0.2301 (0.4658)
Business experience		0.1370 (0.4057)	0.1290 (0.4316)
Patents		0.0782 (0.0613)	0.1041* (0.0601)
Research contracts		0.0939* (0.0551)	0.0955*** (0.0351)
Intrinsic motivation			0.0027 (0.1039)
Extrinsic motivation (promotion)			−0.1221 (0.1334)
Extrinsic motivation (rewards)			0.2899** (0.1322)
Prosocial motivation			−0.3137* (0.1626)
Intercept	−3.9684*** (0.6994)	−4.3637*** (0.7706)	−4.3454*** (0.7451)
Log likelihood	−85.4030	−31.2086	−77.2567
Pseudo R2	0.	0.1	0.1858
Wald chi2	12.30***	19.41***	47.42***
Observations	292	292	292

*, **, *** indicate significance at the 10%, 5%, and 1%, respectively

experience. Based on this rationale, it seems that academics are not surrounded by an entrepreneurial atmosphere. In this respect, if the university aims at instilling entrepreneurship as a way of being, soft structures, informal relationships and networks need to be developed.

Similarly, promotion incentives (external motivations) do not seem to play a role in explaining spin-off creation. A potential reasoning for this is easily found in the accreditation system Spanish universities follow. In order to remain in academia, scholars are forced to concentrate on producing the outputs regarded as most valuable in these assessment frameworks (i.e., publications). Future research should examine for the existence of potential different motivational schemes between permanent and non-permanent faculty.

On the contrary, extrinsic motivations in the form of rewards and reputation perceived by the researcher as a result of his/her involvement in entrepreneurial activities do have a positive and significant effect on spin-off creation. This result is interesting as it suggests that an important motivator relates to the access to new sources of funding, the possibility to gain external reputation and the prospects to enhance career development—in terms of keeping researcher's visibility and market value high—. In this respect, it is worth mentioning that average salary for professors is rather low compared to the one in industry. In addition, in Spanish public universities, professorship contracts tend to have some incompatibilities with other type of jobs which impedes professors having additional jobs or being involved in other revenue-generating activities not related to universities. All these arguments reinforce the importance of rewards. The creation of spin-offs is one of the few options that professors have to increase their income without generating any incompatibility with their current jobs.

Lastly and contrary to expected, prosocial motivations are found to have a negative and significant effect in new venture creation. Future studies should further investigate this relationship in order to obtain additional insights that help explain this result.

As for the remaining variables included in the model, we observe that the use of the TTO is paramount. This results reinforces the existing literature that argues that TTOs appear as intermediary organizations between researchers and industry (Villani et al. 2017) with a range of activities to accelerate the commercial exploitation of research outputs (Weckowska 2015).

Previous linkages with the industry are also exhibiting a positive and statistically significant effect in spin-offs. This is not surprising as previous links with the industry probably facilitate the contacts, experience and the necessary know-how that hasten spin-off creation and development.

5 Concluding Remarks

Motivations do shape academics' intention to become entrepreneurs. Research on this topic has usually taken a macro-meso perspective, studying which institutional characteristics and policies foster entrepreneurial behaviour. Although contextual

factors are extremely relevant in facilitating innovation, individual motivations play a critical role and have been largely unexplored in the academic setting. We respond to this call for new insights by conducting a study at the individual level of the researcher. Through a questionnaire, we have explored the underlying motivations that affect researchers' engagement in spin-off creation.

Our results indicate that, for spin-off development, extrinsic motivations relative to rewards influence researchers' interest for entrepreneurship. Prosocial motivations also play a role, although in the opposite direction from the one initially expected. Other factors that help explain why some academics decide to embark in entrepreneurial activities include previous research experience and the use of facilitating structures such as TTOs. In terms of policy making our findings indicate that the current incentive system seems to discourage academics from becoming entrepreneurs. There is also a lack of an entrepreneurial culture. Academics should be encouraged to provide new ideas, explore new ways of doing things, and face new roles and challenges.

Although we believe that this study provides important and useful insights to the existing research in academic entrepreneurship, it is important to note that there are some limitations that constitute new research avenues for future studies. First, this study uses data from one university located in Spain. Given the particular characteristics of the university under study, it would be recommended for the present research to be extended to other universities, countries and cultures to be confident about the generalizability of results. Second, further research might investigate the use of other dependent variables beyond spin-off creation. The challenge here relies on how to best capture the output resulting from entrepreneurial initiatives, as in many instances, these activities are difficult to quantify. Third, other variables not included in the model might help explain spin-off creation. In the empirical application we did consider age, gender and research area as explanatory variables. However, their inclusion in the model did not modify nor improve the results; therefore, we dropped them out. The use of other explanatory variables should also be explored.

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The Relation Between Entrepreneurial Behaviour and Entrepreneurship Rates Over Time: An Approach Using Qualitative Comparative Analysis

Paulo Ferreira and Andreia Dionísio

Abstract In recent years, entrepreneurship has been seen as one of the keys to a country's economic growth and development. From one perspective, this relationship exists because entrepreneurship can be explained as an economic dynamic from Schumpeter's creative destruction paradigm. This dynamic can be explained by both macroeconomic and behavioural factors. For instance, some macroeconomic variables, like investments in human capital, have influence in entrepreneurship (and not only infrastructure investments). According to the Global Entrepreneurship Monitor (GEM), entrepreneurial behaviours and attitudes are also important in determining entrepreneurship rates. Among these, the GEM identifies self-perceptions (perceived opportunities, perceived capabilities, fear of failure and entrepreneurial intention), motivations and expectations (high job creation). In this chapter, we propose to use qualitative comparative analysis to verify which of these entrepreneurial behaviours, perceptions and attitudes (conditions) are more important for higher entrepreneurship rates. Using longitudinal information from GEM, we investigate the influence of those conditions over time. The combination of a large sample with the methodology we use are innovative features of this chapter. Our main results, using fuzzy-set qualitative comparative analysis, point that most important conditions are entrepreneurial intentions, and good perceptions about opportunities and one's own capabilities.

Keywords GEM • Human capital • Entrepreneurship • Entrepreneurial behaviours • Entrepreneurial attitudes

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1 Introduction

Although the concept of entrepreneurship was identified by classical economists, in recent years both society and the academic community have focused more attention on this topic. In some regards, entrepreneurship could be a way to solve unemployment (good for both citizens and politicians), but is necessary to study the phenomenon itself to improve in our understanding of ways to support it.

Irrespective of the motivations for paying more attention to entrepreneurial activity, it is relevant to study because it can influence a country's economic growth (see, for example, Valliere and Peterson 2009). However, it remains important to analyse not only the outcomes of entrepreneurship but also the inputs that lead to entrepreneurial activity.

Using the Total Entrepreneurial Activity rate (TEA) proposed by the Global Entrepreneurship Monitor (GEM), in this chapter, we intend to analyse how some behavioural variables have an effect on entrepreneurship rates. We base our analysis on the indexes proposed by GEM, which includes perceptions about opportunities and capabilities, entrepreneurial intentions, fear of failure, a motivation index and the perception of entrepreneurship as a high status job.

As our objective is to determine the most important conditions for higher entrepreneurship rates, we use a fuzzy-set qualitative comparative analysis (fsQCA) with our data. We analyse how those conditions affect entrepreneurship in the period between 2010 and 2016. Our main results point to the relevance of the perception of capabilities and opportunities as well as the personal entrepreneurship intention. The other variables have mixed results, and some of these could be related to the worldwide economic crisis.

The remainder of the chapter is organized as follows: Sect. 2 reviews the theoretical background; Sect. 3 presents both data and methodology; Sect. 4 shows the results and Sect. 5 concludes.

2 Theoretical Background

Although often used in recent literature, the concept of entrepreneurship was already used by classical economists. One of the first authors writing about it was probably Richard Cantillon (1755), who called an entrepreneur a person "willing to buy at a certain price and to sell at an uncertain price". Other classics like Adam Smith (1776), who referred to entrepreneurs as economic actors transforming demand in supply or Jean Baptiste Say (1816), who identifies them as a person owning a firm and creating value for an economy, also dealt with the subject. Schumpeter (1934) linked the concept of entrepreneurship with innovation, recognizing an entrepreneur as anyone who places any kind of new product, service or process on the market.

Irrespective of the different possible approaches, most studies about entrepreneurship focus on the process of identifying and developing opportunities (see, Kirzner 1973; Shane and Venkataraman 2000; Shane 2003, among others), which ends in the creation of new firms. Low and MacMillan (1988) and Gartner (1988) are some of the pioneers in this area, and their definition is currently employed by the Global Entrepreneurship Monitor (GEM), a worldwide study about the levels of entrepreneurship. Started in 1999, GEM is compiled by a consortium of universities and its most recent version has 2016 data (GEM 2017).

The conceptual framework behind the GEM report is based on three components: individual attributes, social values and entrepreneurship indicators. According to the report, the first component reflects "perceptions about opportunities, capabilities to act entrepreneurially, entrepreneurial intentions and fear of failure", the second component "the society values entrepreneurial behaviour" and the last component the "different forms of entrepreneurial activity along the life cycle of a venture (nascent, new business, established business, share of high ambitious ventures, discontinuation) and motivation for venturing (opportunity vs. necessity based ventures)" (GEM 2015, p. 27). McClelland (1961) was one of the first to parallel the general behaviours of people in society with that of entrepreneurs and the behaviours they exhibit in making decisions.

The main indicator of GEM is Total Early-stage Entrepreneurial Activity (TEA), the share of individuals aged 18–64 who have created or managed a business in the last three and a half years. TEA is calculated but complementary data is retrieved from two surveys: the Adult Population Survey (APS) and the National Experts Survey (NES). APS recovers information about individuals' attributes, attitudes and activities, while NES records experts' opinions about entrepreneurship and about countries' conditions.

Our main objective is to study the relationships between behaviours and entrepreneurship using APS variables. In particular, there are four individual attributes of APS: (1) perception of opportunities; (2) perception of own capabilities to be a successful entrepreneur; (3) entrepreneurial intentions; and (4) fear of failure. The first three conditions are entrepreneurship enhancers, while the fear of failure has the opposite effect on entrepreneurship. Studies such as those by Shane (2003), Arenius and Minniti (2005), Koellinger et al. (2007), Caliendo et al. (2009) and Patel and Thathcer (2012) recognize these influences.

Besides individual attitudes and attributes, APS also analyses social values, with three different variables: (1) if entrepreneurship is a desirable career choice; (2) if it is recognized as having a high level of status and respect; (3) if media attention promotes entrepreneurship. Studies such as Hoang and Antoncic (2003) or Kwon and Arenius (2010) identify the importance of these social values also as entrepreneurship enhancers. Due to data availability, which will be explained in the next section, in this chapter only the first question is used.

Since 2010, the GEM report has also included a motivational index, showing the percentage of TEA that is driven by an opportunity motive, divided by the percentage driven by a necessity motive. This is an important index, because it links the difference between these two ways to promote entrepreneurship in a country.

Normally, more developed countries have a higher share of opportunity entrepreneurs (see, for example, Wong et al. 2005 or Valliere and Peterson 2009). Moreover, according to Acs et al. (2008), opportunity entrepreneurship has a positive impact on economic development, while necessity entrepreneurship has no impact.

As the previously identified factors influence people's choices, it is important to know which are more important for higher entrepreneurship rates. This could be interesting, for example, for political decision-makers deciding which factors they should pay more attention to. This chapter is therefore devoted to studying the most important conditions for higher entrepreneurship levels, and the outcome. The outcome and conditions are presented in Table 1. TEA is the outcome and the remaining variables the conditions.

The model we try to explain is TEA = f(POPP, PCAP, FFR, EINT, MOTIV, HJOB), f(.) meaning a *function of*. Furthermore, we propose to analyse if the importance of the conditions has changed over time. We use data from 2010 to 2016, as will be explained in more detail in the next section.

For a wider review of studies about entrepreneurship, which is not possible in this chapter due to space constraints, please read, for example, the work by Audretsch (2002) or Acs and Audretsch (2010).

The remainder of the paper is organized as follows: in Sect. 3 we explain the data and methodology used (fsQCA); Sect. 4 presents the results and Sect. 5 concludes.

Table 1 Outcome and conditions

Total entrepreneurship activity (TEA)	Percentage of 18–64 population who agree with the statement that in their country, most people consider starting a business as a desirable career choice
Perceived opportunities (POPP)	Percentage of 18–64 population (individuals involved in any stage of entrepreneurial activity excluded) who see good opportunities to start a firm in the area where they live
Perceived capabilities (PCAP)	Percentage of 18–64 population (individuals involved in any stage of entrepreneurial activity excluded) who believe they have the required skills and knowledge to start a business
Fear of failure (FFR)	Percentage of 18–64 population (individuals involved in any stage of entrepreneurial activity excluded) who indicate that fear of failure would prevent them from setting up a business
Entrepreneurial intention (EINT)	Percentage of 18–64 population (individuals involved in any stage of entrepreneurial activity excluded) who are latent entrepreneurs and who intend to start a business within 3 years
Motivation (MOTIV)	Percentage of those involved in TEA that are improvement-driven opportunity-motivated, divided by the percentage of TEA that is necessity-motivated
High status for successful entrepreneurs (HJOB)	Percentage of 18–64 population who agree with the statement that in their country, successful entrepreneurs receive high status

Source: GEM (2017)

3 Data and Methodology

Retrieving data from different GEM reports, from 2010 to 2016, our objective is to analyse if the main conditions to have higher entrepreneurship rates changed over time. We start our analysis in 2010 because it is the first year where the motivation index is calculated. This index gives us a ratio between opportunity and necessity entrepreneurship, which is a relevant measure to explain entrepreneurship rates. So we use a total of 7 years (from 2010 to 2016), making a separate analysis for each year. Because the countries in GEM reports vary over the years, the sample does not have the same number: we have 59 countries in 2010, 55 in 2011, 67 in 2012, 70 in 2013 and 2014, 60 in 2015 and 65 in the last year of analysis. The number of observations is not a problem, because the methodology used fits well even in the case of small or medium sized samples (see, for example, Vis 2012).

As previously indicated, there are also two other variables that could be used in the analysis: entrepreneurship as a good career choice and as giving high status. However, over the years, there are several missing values. In order to use the maximum possible number of observations, we excluded these variables. However, they correspond to social values, so are not crucial in this analysis as we focus on behavioural conditions.

We chose to apply a fuzzy-set qualitative comparative analysis (fsQCA), aiming to capture the most important patterns (conditions) which cause a given outcome (Wagemann and Schneider 2010). According to Vis (2012), "fsQCA fits the causes-of-effects approach most because this approach aims to reveal the minimal (combinations of) conditions bringing about a particular outcome in specific cases."

Generally, qualitative comparative analysis was created by Ragin (1987) and over time has undergone several developments. The use of fuzzy sets allows us to work with continuous data, but qualitative comparative analysis could also be used with binary variables (crisp-set qualitative comparative analysis) or with multiple value data (Ragin 2008). It was originally used in social sciences such as Sociology, but now has several applications related to economics and management. See, for example, Vis et al. (2007), which studies countries' economic performance, Schneider et al. (2010), analysing export performance or Ferreira and Dionísio (2016a, b, c), studying respectively economic growth, innovation and entrepreneurship.

With this methodology, two kinds of conditions can be found. Firstly, it detects necessary conditions, those which have to be identified for a given outcome. The necessary conditions are measured by a consistency level, created by Ragin (2006), showing the degree to which each case corresponds to a given solution. The consistency measure used here penalizes severe inconsistencies. The truth table algorithm is used to identify sufficient conditions (Ragin 2008).

fsQCA is not used with the original variables. It needs a calibration process being necessary, which according to Ragin (2000), implies "substantive and theoretical knowledge relevant to set membership". With this process, the outcome and all the conditions are rescaled between 0 and 1, and could be a fully in set (when condition/outcome take the value of 1), fully out set (the value of 0) or at a

crossover point (0.5). The calibration method is based on the percentile approach, which is appropriate in the case of continuous data (Ragin 2008). The "fully in" is defined as the 95th percentile, the "fully out" as the 5th percentile and the "neither in nor out" point is defined by the median. The results are calculated using the fs/QCA software package (2.5).

The literature contains some applications of qualitative comparative analysis to entrepreneurship. Hornaday (1992) uses it to find a definition for entrepreneurship. More recently, other studies have applied these methodologies: Khefacha and Belkacem (2015) study how psychological factors influence individual intentions among Tunisian entrepreneurs; Muñoz and Kibler (2016) work on the confidence of social entrepreneurs in the UK; Ferreira and Dionísio (2016b), Coduras et al. (2016) and Velilla and Ortega (2017) study the most important conditions to attain higher entrepreneurship levels. The approach in this chapter is similar, but in this case we adopted a longitudinal approach.

4 Results

As mentioned, the main goal of this research is to evaluate the relationship between entrepreneurial behaviour and growing entrepreneurship rates. The basic questions motivating this study are: (1) are entrepreneurial behaviours important conditions influencing entrepreneurship rates? and (2) if so which ones?

Our first step is evaluation of the necessary conditions. The results are presented in Table 2, and just as Fiss (2011), we will focus on results whose level of consistency is above 0.8.

Table 2 Necessary conditions for higher Total Entrepreneurship Activity (TEA)

	2010	2011	2012	2013	2014	2015	2016
popp	0.868	0.752	0.867	0.821	0.772	0.826	0.786
~popp	0.517	0.576	0.525	0.509	0.549	0.510	0.555
pcap	0.902	0.808	0.870	0.835	0.896	0.886	0.845
~pcap	0.456	0.536	0.542	0.516	0.466	0.495	0.550
ffr	0.608	0.579	0.571	0.572	0.586	0.600	0.571
~ffr	0.740	0.726	0.829	0.770	0.774	0.713	0.771
eint	0.869	0.837	0.843	0.837	0.866	0.859	0.822
~eint	0.504	0.495	0.557	0.516	0.486	0.522	0.547
motiv	0.517	0.493	0.594	0.554	0.564	0.596	0.577
~motiv	0.805	0.802	0.754	0.742	0.748	0.700	0.735
hjob	0.031	0.609	0.615	0.615	0.587	0.612	0.651
~hjob	1.000	0.636	0.716	0.694	0.685	0.672	0.670

Note: Due to space constraints, Table 2 contains only the consistency coefficient. Coverage coefficients are available on request and the minimum value obtained was 0.411. All those values are supplied on request

It is interesting to note that some conditions remain important as necessary over time, namely perceived capabilities (pcap) and entrepreneurship intentions (eint). The results make sense and are somewhat expected. But the absence of motivation is a necessary condition in 2010 and 2011, which may make interpretation difficult. However, the existence of economic difficulties makes entrepreneurship rates increase due to necessity, rather than based on opportunity (see, for example, Fritsch 2013 or Simón-Moya et al. 2014, among others). In that period, the need to create a job and acquire an extra source of income was probably an important motor of entrepreneurship. Perceived opportunities are considered relevant for most of the period under analysis, the remaining years being very close to the minimum consistency coefficient.

These results are complemented by the evidence of absence of high status for successful entrepreneurs (~hjob) in 2010 and the absence of fear of failure (~ffr) in 2011. The absence of the perception that entrepreneurship could have high status, being relevant just in the first year of the sample, could mean that in a crisis period need is more important than status. This may be closely related to the irrelevance of failure. In fact, if someone needs to be an entrepreneur to solve job issues and have an important source of income, the opportunity cost would be very low. Regarding the fear of failure, this serves as a disabler of entrepreneurship. In fact, it only has a consistency value coherent with necessary conditions for 1 year. However, most of the time, it has a value near 0.8, which should be noted.

So it is possible to conclude that besides entrepreneurial intentions (which certainly influence the decision to create a firm), important behavioural perceptions are necessary conditions for people to start business activities.

We continue with the analysis of sufficient conditions, following the procedure proposed by Ragin and Fiss (2008) which shows the intermediate solution and identifies core conditions (larger symbols) and peripheral conditions (smaller symbols). Tables 3 and 4 show the results for sufficient conditions for higher outcomes in total entrepreneurship activity.

The results for sufficient conditions reveal that the existence of entrepreneurship intentions is (by itself) a sufficient condition for higher TEA. Furthermore, and except in the last year of analysis, it is always the most important sufficient condition itself (it is the combination with highest unique coverage).

The evolution of sufficient conditions over time is quite interesting. Firstly, the increase of solutions in the period under study is noted. This could be explained by the entrepreneurship phenomenon becoming more complex in the last years of the sample. Perhaps some other factors not used in this study (for example, economic factors) could explain this complexity.

Secondly, the motivation index appears for the first time in 2012 (but just peripherally), while in 2016 it becomes a core condition. Although alone it is not a relevant condition, when combined with other variables, it can be important for personal entrepreneurial decisions.

Another interesting feature is the major importance of the absence of fear of failure, motivation and high status of successful entrepreneurs in recent years. These results may be related to the positive cycle in most economies after the

Table 3 Sufficient conditions for higher Total Entrepreneurship Activity (TEA), years 2010–2013

	2010		2011			2012					2013					
	1	2	1	2	3	1	2	3	4	5	1	2	3	4	5	6
popp		•								●						●
pcap		•		●			●				●			●	●	
ffr					⊗			⊗	⊗		⊗					
eint	●		●			●						●	●		●	
motiv									•	•			•			•
hjob					●			•		●		•		•		
RC	0.87	0.82	0.84	0.81	0.46	0.84	0.87	0.52	0.54	0.37	0.72	0.52	0.46	0.50	0.75	0.48
UC	0.13	0.08	0.13	0.06	0.02	0.03	0.02	0.01	0.01	0.00	0.02	0.02	0.00	0.00	0.05	0.01
Cons.	0.87	0.89	0.85	0.76	0.76	0.83	0.82	0.78	0.77	0.81	0.84	0.86	0.90	0.85	0.90	0.76
OSCov.	0.9486		0.9739			0.9755					0.9205					
OSC	0.8366		0.7208			0.7026					0.7452					

RC Raw coverage, *UC* Unique coverage, *Cons* Consistency, *OSCov* Overall Solution coverage, *OSC* Overall Solution consistency. ● Core causal condition (presence). • Peripheral causal condition (presence). ⊗ Core causal condition (absence). ⊗ Peripheral causal condition (absence)

Table 4 Sufficient conditions for higher Total Entrepreneurship Activity (TEA), years 2014–2016

	2014				2015				2016						
	1	2	3	4	1	2	3	4	1	2	3	4	5	6	7
popp				•				●		●					
pcap		●	●	●		●	●		●						
ffr			⊗	⊗			⊗	•			⊗	⊗	⊗		
eint	●				●								●	●	●
motiv			•				⊗	•				●			●
hjob		•	●				●	●			●		●	●	
RC	0.87	0.52	0.47	0.63	0.86	0.89	0.38	0.31	0.85	0.79	0.51	0.44	0.67	0.55	0.44
UC	0.17	0.01	0.01	0.00	0.02	0.05	0.01	0.01	0.02	0.03	0.00	0.00	0.00	0.01	0.01
Cons.	0.84	0.83	0.84	0.88	0.82	0.79	0.76	0.75	0.79	0.76	0.74	0.75	0.84	0.79	0.84
OSCov.	0.9448				0.9583				0.9807						
OSC	0.7643				0.7102				0.6567						

RC Raw coverage, *UC* Unique coverage, *Cons* Consistency, *OSCov* Overall Solution coverage, *OSC* Overall Solution consistency. ● Core causal condition (presence). • Peripheral causal condition (presence). ⊗ Core causal condition (absence). ⊗ Peripheral causal condition (absence)

sub-prime crisis. Indeed, when the strength behind entrepreneurship lies not only in necessity, it becomes important to have some conditions in terms of behaviour. In this context, status and motivation are important conditions for investment in entrepreneurship. At the same time, and probably because of the level of investment, it is very important not to be afraid of failure.

Is also important to refer to the high level of overall coverage for the 7 years under study, in which the previous solutions show raw coverage and consistency above 0.79. Regarding overall consistency, the last year under analysis has the lowest value (probably due to some complexity), while the others show robust values.

5 Some Conclusions

The main goal of this study is to investigate the importance of perceptions and behavioural attitudes in entrepreneurship activity. Economic, social, political and technological conditions are naturally extremely important, and those are analysed in several studies. But human behaviour: the fear of failure, motivations, intentions, perceived opportunities, status; could represent significant conditions for accelerating or slowing down entrepreneurial initiatives. In this context, we used data from the Global Entrepreneurship Monitor (GEM). In the GEM database we find information about national contexts, entrepreneurial behaviours and attitudes. Among these entrepreneurial behaviours and attitudes, the GEM identifies self-perceptions (perceived opportunities, perceived capabilities, fear of failure and entrepreneurial intention), motivations, expectations (about high job creation) and societal values (social status and career choice).

We carry out a longitudinal study, from 2010 to 2016, using fsQCA as the main tool to analyse the necessary and sufficient conditions to achieve higher rates of entrepreneurship. With this research work we show it is necessary to have entrepreneurial intentions, and good perceptions about opportunities and one's own capabilities (self-confidence). In terms of sufficiency, the tendency is not so clear, although the necessary conditions mentioned above are also important in sufficient conditions.

The motivation index was expected to have more importance in both types of condition, such as the perception of entrepreneurship as a high status job. However, those perceptions and behaviours did not show such relevance in our results. This may be related to the different types of entrepreneurship in terms of opportunity/necessity. Entrepreneurship through need could have a higher weight (because of the countries under study) and so these perceptions and behaviours do not have a major effect on the decision to create a firm. Future research could split the sample according to countries' economic development. This could reveal the real difference in perceptions and attitudes in the phenomenon of firm creation.

Our results are interesting, but limited to the available data. The fact that we have a time horizon of only 7 years could be seen as not enough to a deep analysis

for entrepreneurship motivations. Although, the use of a large sample of countries, allows us to have broader conclusions. The inclusion in the future of more conditions, like macroeconomic variables, could allow us to have deeper findings.

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Entrepreneurship Under Risk and Uncertainty: A Review of the Experimental Evidence

Konstantinos Georgalos

Abstract A considerable amount of research has been devoted in an effort to identify the behavioural traits that distinguish entrepreneurs from other people. A strand of the literature investigates the attitudes that entrepreneurs exhibit towards uncertainty, either objective (risk) or subjective (ambiguity). Indeed, the standard theory predicts that people, who are involved in entrepreneurial activities, tend to have distinct risk and ambiguity attitudes compared to those who engage in salary-paid employment. Nevertheless, the empirical evidence on this topic, based on field data, is mixed. Recently, methods from the experimental economics literature have been employed in order to shred light to this issue. This chapter provides an extensive review of the literature that experimentally studies the correlation between uncertainty attitudes and entrepreneurial decision making. The chapter concludes with a discussion of potential paths for further research.

Keywords Risk • Ambiguity • Entrepreneurship • Experiment • Aversion to uncertainty

1 Introduction

Deciding to engage to entrepreneurial activities, is undoubtedly a decision to be made in an environment which is characterised by uncertainty. Examples of this kind of uncertainty include returns of investment that will be realised in the future, payoffs that are highly volatile, hi-tech investments which require excessive up-front costs when the probability of success is quite small, or political turmoil to name but a few. This uncertainty may be either objective, where the chances of future events are determined by a well-defined probability distribution (risk), or subjective, where there is a lack of similar probability distribution (ambiguity). Consequently, one would expect that entrepreneurs tend to differ in both the way they perceive uncertainty, as well in their attitudes towards uncertainty, compared to individuals that are not involved into entrepreneurial activities. Indeed, the

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theoretical literature has established this correlation as early as Cantillon (1755), topic which was later revived in Knight (1921), work that inspired most of the contemporary literature of choice under uncertainty. More recently, Kirzner (1973) and Kihlstrom and Laffont (1979) established the workhorse model of entrepreneurial decision making under uncertainty. As Holm et al. (2013) highlight, "Given the nature of entrepreneurial action, most theories of entrepreneurship and entrepreneurial decision making emphasize uncertainty as a conceptual cornerstone". The theoretical prediction is straight-forward: there is a strong correlation between the degree of risk aversion and entrepreneurial choice. The less risk averse an agent is, the more probable she is to get involved into entrepreneurial activities.

Early studies that aimed to obtain empirical evidence on this relationship, were exclusively based on surveys [For a recent literature of the review of survey-based studies, see Asterbo et al. (2014); for further references see Holm et al. (2013)], using non-experimental measures to elicit risk preferences. The majority of these studies tends to identify the intuitive pattern. Recently, entrepreneurial research has started exploring methods from the experimental economic literature, applying incentivised, controlled tasks in an effort to obtain more robust results. Nevertheless, Koudstaal et al. (2016) note that, "all studies using experimental measures of risk aversion find no differences between entrepreneurs and the control group, whereas most of the other studies do find differences supporting the common wisdom that entrepreneurs are less risk averse". This failure to reconcile the survey-based evidence with that generated by experiments, calls for a more careful review of the experimental literature on this topic.

This chapter aims to provide a thorough review of the up to today experimental literature that aims to investigate whether entrepreneurs perceive uncertainty in a different way, compared to sub-samples of the general population. To this end, several researchers have investigated various aspects of preferences, such as risk preferences, ambiguity preferences or time preferences that are able to influence behaviour and more particularly entrepreneurial behaviour. Kraus et al. (2016) provide a very detailed review on the experimental methods that have been applied in entrepreneurship research in general. Nevertheless, as the objective of that article had a broader scope, some key studies on this topic have been omitted, fact that impeded the authors to provide a spherical overview of the correlation between entrepreneurship and uncertainty. This is a gap that the present chapter aspires to bridge. Our scope is to review all the studies that use controlled, monetary incentivised, experimental methods to explore potential differences that characterise a population of entrepreneurs, when this sub-sample is compared to a control group (either students, employees or general, non-entrepreneurship related subjects). The list of published articles that we could identify and satisfy the above criteria consists of nine studies overall, which are reported in Table 1. All of these studies account for differences regarding a specified measure of risk aversion, while only three articles include some tasks with subjective risk (ambiguity). For each of the studies, we present the experimental design along with the main results, in an effort to organise the literature on the topic, as well as to identify topics that have not been investigated yet. Table 2 provides a summary of the experimental design

Table 1 Experimental studies of entrepreneurship under uncertainty

Study	Risk	Ambiguity	Elicitation method	Region
Elston et al. (2006)	X	–	Holt and Laury	United States
Macko and Tyszka (2009)	X	X	Lotteries, natural events	Poland
Masclet et al. (2009)	X	–	Holt and Laury	France
Sandri et al. (2010)	X	–	Holt and Laury	Germany
List and Manson (2011)	X	–	Pairwise3-outcome lotteries	Costa Rica
Burmeister-Lamp et al. (2012)	X	X	Time allocation	Germany
Holm et al. (2013)	X	–	Holt and Laury	China
Andersen et al. (2014)	X	–	Holt and Laury	Denmark
Koudstaal et al. (2016)	X	X	Holt and Laury	Netherlands

Table 2 Methods and main results

Study	Elicitation method	Statistical method	Differences	
			Risk	Ambiguity
Elston et al. (2006)	Holt and Laury	Logit regressions	Lower risk aversion for entrepreneurs	NA
Macko and Tyszka (2009)	Lotteries, natural events	#of safe choices	No difference	Entrepreneurs opted for the more uncertain option
Masclet et al. (2009)	Holt and Laury	#of safe choices + Random effects probit	Self-employed are less risk averse	NA
Sandri et al. (2010)	Holt and Laury	#of safe choices	No difference	NA
List and Manson (2011)	Pairwise3-outcome lotteries	OLS + Mixed Logit	CEOs opt for the high-probability bad outcome	NA
Burmeister-Lamp et al. (2012)	Time allocation	Tobit regressions	No difference	No difference
Holm et al. (2013)	Holt and Laury	#of safe choices + Ordered probit regressions	No difference in non-strategic risks. Differences in strategic risks	NA
Andersen et al. (2014)	Holt and Laury	Maximum likelihood estimation	Entrepreneurs differ in their optimism level	NA
Koudstaal et al. (2016)	Holt and Laury	#of safe choices + Ordered probit regressions	Entrepreneurs are less loss averse	Entrepreneurs are more ambiguity averse

that was employed in the study along with the econometric tools that have been used to undergo the statistical analysis. The two last columns of the Table, summarise whether and what kind of difference was observed in the each experiment.

The chapter is organised as follows. We first review the experimental studies that employ incentivised measures of preferences. We split the presentation in two sections, one focusing on decision making under risk, and one focusing exclusively on studies on ambiguity attitudes. As different approaches have been adopted in the literature, we choose to review the papers in chronological order. We conclude, by suggesting some potential future research paths.

2 Risk and Entrepreneurship: Experiment-Based Evidence

This experimental literature is as early as Elston et al. (2006) where the authors collected data in order to examine stereotypical traits of entrepreneurs. To this end, they conducted an artefactual field experiment, in the sense of Harrison and List (2004), recruiting 182 subjects. Out of all the participants, 23% were classified as full-time entrepreneurs, 21% were classified as part-time entrepreneurs, in the sense that they were engaged in both salary-based and business-related activities, and the remaining of the sample acted as a control group given that they were categorised either as salaried non-entrepreneurs, or not belonging to any of the above categories. In order to elicit risk preferences, a standard Holt and Laury (HL) multiple price list was used (Holt and Laury 2002). The aggregate results indicate the existence of subjects who are risk loving (switch before the point that risk neutral subjects switch) with a general tendency of the experimental population to be risk averse. Using an interval regression model they obtain estimates of the marginal effect of the subject being an entrepreneur, controlling for demographic characteristics. They find that the full-time entrepreneurs are less risk averse compared to both the part-time entrepreneurs and the control group. Nevertheless, they find that part-time entrepreneurs do not differ significantly from the control group. Finally, they cannot reject the hypothesis of risk neutrality of entrepreneurs over the income interval applied in the experiment, providing supporting evidence to the theoretical predictions.

Macko and Tyszka (2009) conducted an experiment to test self-confidence, as well as risk attitudes. The participants consisted of a group of students with no intention to engage to any kind of entrepreneurial activities, a group of students that have already attended a business course particularly designed for those that intend to become future entrepreneurs and a third group of graduates that have already become entrepreneurs. In this study, risk propensity, as the authors called it, was measured with the aid of a single task that contained six chance-related situations. The subject is asked to choose one of the six situations A–F, with payoffs to be determined by two regions, which yield different payoffs, gradually becoming riskier, knowing that each region may happen with equal chances. Despite the fact that entrepreneurs seem to be significantly more optimistic compared to the

control groups, the experimental data fail to detect a pattern that would indicate lower risk aversion of the subjects that are somehow related, or intend to engage to entrepreneurial activities.

In Masclet et al. (2009), decision under risk was tested using a Holt and Laury (2002) list. There were in total three different treatments in a "within" subjects design, including an *individua*l treatment, where each subject was choosing individually, a *group* treatment, where subjects in groups of three, needed to reach a consensus via voting regarding a risky choice, and finally a *choice* treatment where participants could choose between making decisions on their own or as member of the group. The task was repeated 10 times, and groups were randomly re-matched at the end of each task. Group choice was determined by voting. Finally, in the choice treatment, the subjects' willingness to pay was elicited before each decision, regarding their willingness to either make the choice on their own or in a group. The three bidders with the highest proposals were choosing individually, and the remaining in groups. The subject pool was differentiated from the traditional standards, in the sense that the population consisted both of salaried and self-employed subjects. In total, 144 subjects were recruited, 43% of those being classified as self-employed or employees, and the remaining being college students, the choices of which acted as a control group.

Overall, their findings replicate the main pattern of slight risk aversion for the majority of the subjects. Decisions made by groups or in the choice treatment, are significantly more risk averse compared to those made solely by individuals (36.8% 45.8% respectively against 25.9% chose 7 safe lotteries), result which is also confirmed by probit regressions. Self-employed agents appear to be less risk averse compared to salaried workers and students. These differences are statistically significant between self-employed and salaried workers, as well as self-employed and students, based on a Wilcoxon rank sum test. No difference was observed between salaried workers and students. Moreover, salaried workers of the private sector appear to be less risk averse compared to salaried workers of the public sector. Finally, regarding voting behaviour, it appears that the more risk seeking persons in a group, were more willing to align their preferences with those of the group that expressed risk aversion. The authors claim, without providing the reasoning behind this, that the direction of causality is from self-employment to risk attitude, rather than the other way round (Masclet et al. 2009, p. 471).

Sandri et al. (2010) consider disinvestment behaviour of entrepreneurs when choices are irreversible using an asset liquidation experiment and test the timing of abandoning a project with risky returns. They focus on the question of why entrepreneurs hold on with an under-performing business instead of selling them "under-price". The experimental task involved a problem of optimal stopping, where subjects should decide when to abandon a project for a constant termination value. The task involved stopping decisions on a project that yielded returns based on a binomial distribution with $p = 0.5$ and with the first period revenues being always equal to 1000. The risk-free interest rate was equal to 10% while the constant revenue of abandoning the project was equal to 11,000 points (with an interest rate of return of 10% per period applied to the revenue). By the last period

the subject was obliged to abandon the project. There were two treatments, different in volatilities, where in the first the potential gains and losses were 200 points while at the second 500 point. The task was repeated for 20 rounds. At the end of all rounds, a Holt and Laury (2002) list was applied in order to elicit risk preferences.

Prime objective of the study was to discover whether different volatilities generate different results (large-scale experiment) and to test whether the results of one of the treatments can be replicated when entrepreneurs participate. Overall 84 participants were recruited (37 non-students and 39 students) for the first experiment. In the second experiment the high volatility treatment was repeated with participants being hi-tech entrepreneurs. Their sample of entrepreneurs consists of only 13 subjects (15 were recruited but the data of 2 were later discarded). The findings show that subjects hold on for too long in positions where they were losing money. Nevertheless, no significant difference was observed in choices between entrepreneurs and non-entrepreneurs. They find that none of the entrepreneurs is risk seeking, 23.1% are risk neutral and the remaining risk averse. On top of that, there does not seem to exist a significant difference regarding risk attitudes between non-entrepreneurs and entrepreneurs.

List and Manson (2011) challenge the descriptive validity of the Expected Utility model and explore how chief executive officers (CEOs) decide when they face situations that yield small probabilities and high loss events. Their experiment consists one of the first artefactual field experiments to test the Expected Utility model over losses, with subjects different from the standard student population. The subject pool consisted of 101 subjects, 29 of whom where CEOs from the coffee beneficio (coffee mill) sector of Costa Rica, and the remaining were Costa Rican undergraduate students. As the experiment involved the realisation of actual losses, the first part included the participation of subjects to unrelated, real-effort tasks where they had the chance to generate their own income, from which could be later subtracted. In the actual experiment, subjects faced 40 pairwise lotteries, with three outcomes each, in the spirit of Harless (1992) and Hey and Orme (1994). Every lottery is characterised by three outcomes $x_1 < x_2 < x_3$ and a respective probability distribution p_i over these outcomes. An additional contribution of this study, is that the domain of focus was that of losses, therefore a typical lottery involved losses of $x_1 = \$80$, $x_2 = \$30$ and $x_3 = \$0$ for the CEOs (the amounts were scaled down by 10 for the students). The important element of the experiment was to attach a small probability of 5% to the worst case scenario (lose \$80). Three baseline lotteries were compared to a set of 12 other lotteries, where the probability of the worst event was ranged from 1% to 20%, with a corresponding change of the best event probability (lose nothing). Some lotteries where the probability of one of the events was equal to zero was also included, resulting to a battery of 40 lotteries in total. In all lotteries, the payoffs have been constructed is such a way to reflect different "catastrophic" scenarios. Lottery A, could be seen as the safest lottery, lottery B involved substantial medium size losses, while lottery C included modest to large losses. One problem was randomly chosen to be played for real and events were realised with the aid of a randomization device.

A first result shows that CEOs are slightly more likely to choose options with higher probability regarding the worst outcome. They attribute this result to either different degrees of risk aversion, or due to differences in the underlying preference functional that characterises each subject. Without any assumptions regarding the shape of the utility function, and assuming expected utility preferences, risk indices are estimated for all subjects showing no statistically significant difference between the two groups, fact which was also confirmed by subsequent OLS regressions. Drawing from the recent experimental evidence that confirms the extensive violation of Expected Utility preferences, the authors extend their analysis to account for divergence from this model, as well as differences across subject. Rather than assuming some parametric form of preferences, they adopt the Chew et al. (1991) quadratic utility approach. They find that there are substantially important different between the two cohorts. Overall, the study concludes that the assumption of Expected Utility may significantly understate the willingness to pay in order to reduce risk low probability-high losses events. The willingness to pay in both cohorts seems to be behaviourally undistinguishable but heterogeneity is apparent across subject pools.

In the study by Burmeister-Lamp et al. (2012), the focus is on the so called *hybrid* entrepreneurs, which refers to those professionals who although are being employed in a salary-paid job, they spent a part of their working-hours to a new enterprise that they have set up. The main research question is to determine how these entrepreneurs allocate their time, and what is the role of risk attitudes as well as the role of regulatory focus motivations. The experimental decision task comprises of a decision maker having to choose on how to allocate her total endowment of working hours t, between a wage job with fixed income, and a newly formed enterprise, that requires a minimum amount of e working hours per day. The new enterprise is characterised by uncertainty, which is measured by the expected return and its variance. Large return with sizeable variance is labelled as "high" stake, while low return with low variance as "low" stake. Therefore, the agent must choose the optimal number of hours h with $h \in [e, t]$ that will maximise her utility. Participants faced seven different scenarios, with different returns from the enterprise and different wage from the salary job, and they were asked to allocate their time between the two employment conditions. Based on the data, the authors tested four theoretical hypotheses, two focusing on utility theory, where risk averse agents would prefer to devote their time to the enterprise (salary job) when the stake is below (above) a threshold, and two based on the regulatory focus theory which test whether subjects are promotion focused (strive for gains) or prevention focused (aim to avoid losses).

In total the data of 54 subjects were included for the analysis (25 early stage entrepreneurs and 29 students). Risk aversion was measured based on a parametric specification of the utility function. Overall, no significant differences were observed between students and entrepreneurs regarding their risk attitude or their regulatory focus. Tobit regressions were applied in an effort to disentangle whether the results are driven by risk aversion, regulatory focus or both. While the regression results show that risk attitude was driving behaviour in the case of students, this

was not the case of entrepreneurs. Rather, behaviour of entrepreneurs seems to be better explained by the promotion and prevention focus effects. Regulatory focus explains time allocation in a better way compared to risk attitudes, nevertheless, a model which accommodated both components appears to be statistically more robust.

Holm et al. (2013) motivated by the recent experimental literature comparing entrepreneur and non-entrepreneur populations, and also interpreting uncertainty in a broader way they designed and conducted a large scale experiment with the participation of chief executive officers (CEOs) in China. More particularly, they hypothesise that entrepreneurs differ from other control groups in the way they deal with uncertainty in two ways. First, based on the theoretical predictions, they assume that entrepreneurs differ in their behavioural traits, by means of being more willing to take risks. An additional behavioural aspect that has not been explored yet in this literature, is the tendency that entrepreneurs have to deal with strategic risk, that is to say, with risk that involves social interaction, situation that characterises the day to day choices of entrepreneurs. To this end, they design an experiment where they account for four different types of uncertainty, namely risk (objective risk), ambiguity (subjective risk), competition (uncertainty regarding others' performance) and trust (uncertainty of trustee behaviour). The main research question was to identify whether there were behavioural traits of entrepreneurs that distinguish them from non-entrepreneurs and more specifically to answer whether entrepreneurs: (1) differ from others with respect to risk taking; (2) have a different degree of ambiguity aversion; (3) have different willingness to compete than others, and; (4) exhibit different trust behaviour.

Participants were 700 entrepreneurs from the Yangzi delta region in China. Subjects were asked to participate in four tasks in total, one for each behavioural aspect. All of the tasks were in the form of Holt and Laury (2002) multiple price lists. The risky task included two versions of the HL multiple price lists. In the first, the lotteries were exactly the same as those presented before. For the other risky choice, subjects were asked to choose between a fixed amount of money and a lottery with a gradually increasing expected value. The ambiguity task, included choices between lotteries were the amount of money was certain and lotteries were the probabilities of the outcomes was fully or partial unknown. The competition task required participant to answer a short trivia quiz, and then to choose between lotteries with certain payoffs and lotteries where their payment was connected to their relative to the others performance to the quiz. Finally, the trust task included choices between lotteries with known probabilities and choices where the action of a third party (the trustee) would determine the payoff. All choices were compared to the choices of 200 randomly selected non-entrepreneurs, who acted as a control group.

Both groups exhibit a certain degree of risk aversion. Nevertheless, the difference was not statistically significant in either of the risky tasks. Entrepreneurs seem to be more willing to compete and this difference is statistically significant, with male participants being more willing to participate to multilateral competition than females. Finally, entrepreneurs appear to be more willing to expose themselves to

social risks compared to the control group, with this difference being statistically significant. Summarising, the experimental evidence shows that, although entrepreneurs do not differ from the control group regarding their attitude towards non-strategic risk, entrepreneurs seem to be more willing to accept uncertainties that involve strategic risks.

Andersen et al. (2014) conducted a set of artefactual field experiments in Denmark in order to study potential difference regarding risk and time preferences of small business entrepreneurs and non-entrepreneurs. This is the first study to account for non-Expected Utility representation of preferences, providing a higher level of flexibility in characterizing risk preferences. The decision task to elicit risk preferences consisted of a standard Holt and Laury (2002) list. The subject pool was composed by 125 subjects, 55 of which reported to own a business, and 70 - non-entrepreneurs acting the control group. Applying similar methods as in Andersen et al. (2008), structural econometric models were estimated, using maximum likelihood estimation techniques. Using this methodology, allowed the authors to obtain individual estimates of risk attitudes and discount rates for each of the subjects.

The first set of estimates, assuming Expected Utility preferences and a power utility function, suggests that entrepreneurs do not differ significantly from the general population regarding risk preferences. Nevertheless, when the estimations were conducted using employment status as a control, instead of firm ownership, the results suggested that self-employed are less risk averse compared to full-time employed, at the 10% significance level. In a second set of estimates, the assumption of Expected Utility preferences and therefore linearity in probabilities is relaxed. Then, new estimates assuming Rank Dependent Utility preferences, a CRRA utility function and a Prelec weighting function were obtained, which allows for probability distortion. In general, subjects are found to have an S-shaped weighting function. Moreover, they found a significant effect of firm ownership on the probability weighting parameters. Entrepreneurs are uniformly found to be more optimistic about the best outcome that non-entrepreneurs. This higher optimism generates higher aversion to variability of outcomes and therefore leads to increase of the utility function concavity of the entrepreneurs. Overall, based on this experiment, small business entrepreneurs in Denmark seem to differ in terms of individual time and risk preferences than the general population. This difference is to be attributed to different levels of optimism rather than to risk attitudes per se. The net results indicate that both groups exhibit the same risk premium, but for different reasons.

Koudstaal et al. (2016) tested the hypothesis of different behaviour of entrepreneurs under risk and uncertainty, by conducting an artefactual field experiment in the Netherlands. Their design is similar to the one employed in Holm et al. (2013) with various extensions. First they compare behaviour between three groups, entrepreneurs, managers and employees. The study takes place in a Western country and the control group consists of employees and not of a general population sample. Second, they complement the risk aversion measures, with a survey-based, non-incentivised measure in order to identify why the experimental literature

usually fails to capture the correlation between entrepreneurship and risk aversion, in contrast to survey-based studies. Third, they test for the existence of a crucial phenomenon in the choice under uncertainty field, that of *loss aversion*, the tendency of decision maker to weight gains and losses in a different way.

Their experimental design included two distinct experiments to account for risk aversion, loss aversion and ambiguity aversion (while List and Manson (2011) were the first to introduce losses, their experimental design did not allow them to measure loss aversion, as all of the lotteries were defined in the losses domain). In a first experiment, risk attitudes were measured in two ways, via a standard HL multiple price list and a survey-based measure of risk aversion, as in Dohmen et al. (2011) where participants assess their willingness to take risk in a scale ranging from 0 to 1. Loss aversion is measured with the aid of a similar multiple price list as before, but with negative payoffs.

In total 2288 subjects participated in the first experiment. The results reveal that the entrepreneurs subjectively assess themselves less risk averse compared to managers, while managers in turn, assess themselves less risk averse compared to employees, based on the subjective measure of risk attitude. When one focuses on the experimental measure, although there is not significant difference between entrepreneurs and managers on their level of risk aversion, this difference becomes highly significant when the comparison is between entrepreneurs/managers and employees. Regarding loss aversion, entrepreneurs appear to be characterised by lower levels compared to managers and employees, who have the greatest degree of loss aversion. Ordered probit regressions, confirm these differences for a series of different explanatory variables.

In a second experiment, the authors augmented their design in order to better capture loss averse behaviour. A new measure was added that would compare subjects' willingness to pay (WTP) with their willingness to accept (WTA) for a given good. The authors employed a between subjects design, where half of the sample expresses WTP and the rest WTA. This method is useful to measure loss aversion in a risk-free environment. A second measure of loss aversion, that included risky choices, consisted of three lotteries, one in the gains domain, one in the losses and the last in the mixed domain. The gains lottery was a choice between a lottery that yields 300 € with probability 0.5, otherwise zero, and a lottery that yields a fixed amount for sure which ranges from 25 to 250 €. The losses task was exactly the same but with pure losses. This allowed to test whether there is significant difference in choices when losses are inevitable. Finally, the mixed task, similar to the first experiments but with scaled-up payoffs, involved lotteries that yielded 300 € with 0.5 and losses ranging [−350 €, 0 €] against a fixed payment of 0 €. The results confirmed the robustness of the first experiment. Entrepreneurs are indeed less loss averse than managers and employees. The scaled up lottery generated the same results, while similar patterns are observed in the pure losses lotteries.

3 Ambiguity and Entrepreneurship: Experiment-Based Evidence

In the previous section, studies that measure attitudes towards risk (objective uncertainty) were presented. Nevertheless, real-life situations are very rarely characterised by well-defined probability distributions. As Holm et al. (2013) point out, standard risk situations do not represent typical scenarios in entrepreneurial decision making. Therefore, if one wants to investigate whether entrepreneurs behave differently in situations that are characterised by uncertainty, attention should be paid on decision making under ambiguity. It is striking the fact that whilst both the theoretical and the experimental literature of choice under ambiguity is well advanced (see Etner et al. (2012) for a review of the theoretical ambiguity models and Hey (2014) and Trautmann and van de Kuilen (2015) for reviews of the experimental literature), there are very few studies in entrepreneurial literature dealing with this topic.

Macko and Tyszka (2009) in a second experiment, in the framework of the study discussed in Sect. 2, recruited 39 employees and 41 self-employed inhabitants to participate to an additional study that would involve more naturalistic decision situations. Based on the idea that real economic life situations do not come along with a well-defined probability distribution, the authors aimed to investigate whether entrepreneurs behave differently when uncertainty, rather than risk, characterises the decision environment. Their research hypothesis stated that entrepreneurs, as compared to employees, would more frequently opt for the risky options. The risky options consist of 7 risky managerial scenarios, namely: taking out a new loan, signing a contract with a new advertising agency, paying a risky advance, selling low-quality fruit, continuing an unsuccessful business, accepting a threat of strike in a workplace, and not admitting to pollution of the environment. For each scenario, the subject should solve a dilemma and choose between two options, where one of the option was always riskier that the other.

Employees opted for the risky choice 44% of the times while the entrepreneurs 55%. This difference is significantly different at the 5% level, confirming the hypothesis that entrepreneurs would be more willing to opt for situations where the probabilities of success or failure are not well-quantified. Note that the authors refer to these scenarios as "risky" scenarios while in fact these cases are characteristic examples of decision making under ambiguity. Therefore it seems that it is not risk attitudes that drive the results but rather attitudes towards ambiguity.

In Holm et al. (2013) the results do not reveal any significant differences in the degree of ambiguity aversion between entrepreneurs and non-entrepreneurs. The design was a standard HL multiple price list where one lottery's payoff was a fixed amount ranging between a maximum and a minimum value, while for the other lottery, the outcomes remained stable and the probabilities were unknown. The point where the subject would switch from the safe to the ambiguous gamble was used as an indication that the subject has reached her reservation value. The same task was repeated by providing some partial information that the minimum

probability that each event may happen is equal to 0.25. Nevertheless, in the design, details are not provided regarding the way that ambiguity was actually implemented during the experiment. The results do not suggest any notable differences between the two groups.

Koudstaal et al. (2016) employ a multiple price list design, as the one used in Fox and Tversky (1995) to obtain measures of ambiguity aversion. The decision maker had to choose between lotteries that involved objective uncertainty, represented by a an urn filled with 50 red and 50 black balls, and lotteries under subjective uncertainty, represented by an urn with red and black balls in unknown proportions. Drawing a red ball from the objective urn would yield 300 €, otherwise zero, while the payoff from the subjective urn ranged from 250 to 475 €. In total 10 pairwise choices were presented to participants. Entrepreneurs behave in a similar way to managers and therefore, are characterised by same degrees of ambiguity aversion. What is striking, is that contrary to the intuitive predictions, both groups appear to be more ambiguity averse compared to employees. Probit regressions confirmed this pattern, but when additional explanatory variables, such as income, age, experience to name but a few, were added to the regressions, the significant result disappeared.

4 Conclusion and Future Research Paths

A fast skim on the experimental literature of entrepreneurship under uncertainty may lead someone to the incorrect conclusion that at the end of the day, risk preferences do not seem to play a vital role in the effort to explain entrepreneurship behaviour. Nevertheless, a careful investigation on the topic may lead to some insights that could contribute both to our better understanding on the causality relationship of risk/ambiguity preferences and participation to ventures, as well as, to provide some paths towards which future research should direct to. Be-low we provide a list of issues, that researchers might be interested to take into consideration, when they design future studies on this topic.

A general issue that needs to be accommodated is the structural assumptions that researchers make regarding the preferences and the utility function of the decision makers. Most of the times, a parametric-free approach may be more preferable and robust, nevertheless, when the issue under investigation becomes more complicated, structural assumptions may help to clarify causalities and too elicit preferences in a more robust way. That is to say, many of the studies that do not observe any differences in risk attitudes, are usually assuming expected utility preferences, where probabilities are perceived “as they are”, and risk attitudes are captured only by the curvature of the utility function. In a recent article, Asterbo et al. (2014) identified three potential interpretations from behavioural economics that may explain entry decision and persistence in entrepreneurship, namely risk attitudes, overconfidence and nonpecuniary motives. Furthermore, they concluded that the Expected Utility model, may not be appropriate to explain the observed behaviour.

Similarly, Hambock et al. (2017) reached to the same conclusion, showing that the measurements used for risk aversion in survey-based studies, are not compatible with Expected Utility.

Characteristically, studies that relax the assumption of Expected Utility, appear to identify differences in risk attitudes which is expressed by the probability weighting function, a behavioral trait that Expected Utility cannot capture. On top of that, Koudstaal et al. (2016) observed significant differences when they introduced lotteries with losses. As Expected Utility does not accommodate losses in a particular way, as opposed to Prospect Theory which specifies a particular behavioural parameter of loss aversion, their results clearly indicate that alternative models should also be considered. An additional example is List and Manson (2011). While the authors obtained rich datasets from their experimental population, the method to analyse the data and make inferences might not be the most appropriate regarding the research question at hand. For example, one could perform some kind of parametric analysis in order to estimate preference functionals in the spirit of Harrison and Ruström (2008b) and Hey et al. (2010), where probability weighting functions could be introduced, or to estimate finite mixture models as in Harrison and Rutström (2008a), where the percentage of Expected Utility subjects as well as the percentage of those who choose based on an alternative model (e.g. Rank Dependent Utility) can be precisely estimated. The above methods can generate precise estimates at the individual or population levels, and risk aversion can be captured by both the non-linearity of the utility function and the probability weighting, disentangling the two effects. As Andersen et al. (2014) conclude, under Expected Utility, the risk premium is uniquely driven by aversion to variability of outcomes, and this effect is captured by the curvature of the utility function. On the other hand, when one relaxes the Expected Utility hypothesis and allows for more flexible specifications, such as the Rank Dependent Utility model (Quiggin 1982) or Prospect Theory (Tversky and Kahneman 1992), risk aversion may also be generated by the relative optimism or pessimism about the chances of success. This attribute is known as probability weighting, which allows to model subjective beliefs of the decision makers, which allow them to under-weight or over-weight the probability of various events.

A second issue has to do with the elicitation mechanisms. As it can be seen in Table 1, the vast majority of the studies uses the same methodology to elicit risk and ambiguity preferences. Nonetheless, there is an extensive literature [see Holt and Laury (2014)], highlighting the drawbacks of this method, or even showing that risk preferences are highly correlated with the task under question (Loomes and Pogrebna 2014), and therefore, careful interpretation needs to be made of the elicited measures. Regarding ambiguity preferences, Hey (2014) and Trautmann and van de Kuilen (2015) review various non-parametric and parametric methods to elicit attitudes, which can avoid the drawbacks that early methods suffered from.

Also, a recent strand of the experimental literature under risk, focuses on the role that group decision making plays in risk attitudes. Given that nowadays, many entrepreneurial decisions are made in executive boards and committees, it would be interesting to complement the work of Masclet et al. (2009) and investigate the role

of groups and its influence to both risk and ambiguity attitudes. Trautmann and Vieider (2012) provide an extensive review on how groups influence risk attitudes.

Last but not least, an element that has not been addressed in a satisfactory level in this literature, is that of *gender effects*. While there is a bulk of empirical studies investigating the relationship between risk and gender (see Filippin and Crosetto (2016) for a review of the literature) the interconnection between gender, risk and entrepreneurial behaviour is an area yet to be explored. To this end, one could incorporate different elicitation methods and employ more informative experimental designs as those described in Holt and Laury (2014), as for instance, the study by Comeig et al. (2015) which separates between downside and upside risk in order to study gender effects.

To summarise these points, the experimental literature of choice under risk is very rich, regarding both the available theoretical and econometric specifications, as well as the methods to elicit preferences and beliefs under uncertainty. On the other hand, the experimental literature that tries to connect risk preferences and entrepreneurial choice has just started and counts less than 10 years. Whilst, this is a positive step ahead, there seems to be a lag in the methods applied to this literature. Both experimental techniques to elicit preferences and statistical methods to analyse the available data have been dramatically improve during the last decade. By adopting all these methodological advances, one should expect to obtain cleaner data, as well as to be able to make more robust inference on the correlation between entrepreneurship and decision making under uncertainty.

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Sensing and Generating New Opportunities for Value Innovation: How Team Behaviour Contributes to Success or to Failure?

Tomás F. González-Cruz and Clara M. Martínez-Fuentes

Abstract The behavioral side of the decision process inherent to strategy is an issue that is gaining attention from both academic and practitioners. At the same time, the Schumpeterian conception of innovation, returns to gain relevance in an environment where technology leads to process dematerialization and exponential paths of change. In this context, this paper analyses which decision processes, cognitive abilities and heuristics lead to sense and generate value innovation for customers. The analysis of 26 master student teams that ran the same strategy simulator show that the consideration and description of a wide range of alternatives and team agreement as a result of discussion of such alternatives, is the recipe that leads to sense and generate value innovation. Alike, neither intuition nor analogies from past decisions are present in the set of conditions that lead to team success.

Keywords Value innovation • Behavioural strategy • Intuition • Analogy • Decision process

1 Introduction

The way teams manage information and behave along the decision making process is at the centre of recent veins of research published in top journals along the last ten years. In parallel, the field of Strategic Management is receiving different contributions that put in the research agenda a set of ways of formulating strategy that enhance the relevance of *Value Innovation*.

Value Innovation emerges from the conjunction of creativity, customer understanding and technology, and is the result of an entrepreneurial strategic process (Ireland et al. 2003). This *Schumpeterian* way of doing innovation requires that firms embark on a continuous search process, looking for present and potential user's needs (Kim and Mauborgne 2005; Priem 2007; Hax 2010). The goal is sensing, generating and capturing opportunities in markets that are in a constant

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state of flux (Schumpeter 1942; Kirzner 1997; Jacobson 1992). This kind of innovation depends on a cognitive reconstruction of existing data and market elements in a fundamental new way (Kim and Mauborgne 2005). As Alvarez and Barney (2007, p.15) state: "rarely will entrepreneurs be able to see 'the end from the beginning'". Thus, intuitive thinking (Kim and Mauborgne 2005, p.67), experimentation by trial and error, and proper analysis through assessment processes and measurement tools, are key elements for discovery and learning (Hax 2010; Madohk and Marques 2013).

This way of making strategy depends on a strategic process where teams devote time to discuss, and as a result reach agreement about the strategy to be executed (Kim and Mauborgne 2005:85; Lawson and Price 2003), consider and evaluate a comprehensive set of alternatives and use proper formal methods and tools (Kim and Mauborgne 2005:88–93; Lovallo and Sibony 2010). Alike, this strategic process depends also on manager's intuition and inductive reasoning, which becomes paramount for developing manager's generative sensing competences (Dong et al. 2016a, b). This view gives way to the aforementioned vein of research that puts the focus on the analytical processes and behavioural side of the strategic process.

Even when research on strategy decision making processes and heuristics has indeed received attention (Priem and Cycyota 2001; Hodgkinson et al. 2008; Schoemaker 1990), nowadays we have neither enough empirical research on this kind of complex judgments nor a unified view of this intricate issue. Therefore, the main goal of this chapter is exploring how the conjunction of different team behaviours—analytical processes and ways of making judgements—affect the team generative sensing competences that lead to create value innovation. Data came from an experiment with twenty six teams that face the same decisions on a strategy simulator game. Results show that a proper combination of search and analytical processes, plus giving enough room to discussion in order to achieve team agreement, are the recipe to sense and generate value innovation.

2 Sensing and Generating Value Innovation: Team Decision Processes and Judgement

Value innovation is a term coined by Kim and Mauborgne (2005) that describes a kind of *Schumpeterian innovation* which supposes the creation of a totally new market. This kind of innovation requires the ability to explore and sense unmet opportunities, gauge the size of the not yet existing market, and create and quickly cope it before competitors come in (ibid).

Kim and Mauborgne (2005) proposal, as well as others made by Ries (2011) and Radjou and Prabhu (2015), present a set of commonalities with regard the way of conceiving innovative value propositions. All three underline that innovation is a question of entrepreneurial mind-set as well as enacting a set of proper exploratory and analytical routines along the decision process.

With regard the decision process, Lovallo and Sibony (2010) highlight, firstly, the relevance of proper analytical processes to make successful decisions. These include the breadth of alternatives considered in the first phases of opportunity identification (Lovallo and Sibony 2006; Hodgkinson and Healey 2011). Because such kind of innovation requires challenging conventional wisdom, it is important to consider the widest range of possible alternatives.

RQ1 The consideration of a wide set of alternatives is present when value innovation is present

The second component of the decision process that draws the attention of scholars is the level of accuracy in describing and representing in detail the alternatives considered. The main purpose is to make able a productive and enriching process of discussion, exchange of views and mutual assessment (Kim and Mauborgne 2005; Levinthal 2011).

RQ2 Detailed representation and description of alternatives is present when value innovation is present

The third element of the decision process that authors like Ries (2011), Kim and Mauborgne (2005) and Lovallo and Sibony (2010) stress, is the importance of relying on formal methods to drive experimentation and organizational learning. As Ries (2011) remarks the creation of new value propositions and innovations requires a systematic process of experimentation, learning by doing, and trial and error, that relies on a set of analytical methods and tools.

RQ3 The use of formal tools to analyse alternatives is present when value innovation is present

Last but not least, other essential issue of strategy decision making is about the level of team agreement about the strategy to be followed. Authors like Lawson and Price (2003) stress the importance of achieving strong agreement between organization members when this kind of critical decisions are taken. Alike, other authors point out that agreement, in the absence of previous dissent and discussions based on information and different points of view, could be a clear signal that something goes wrong (Lovallo and Sibony 2010; Huyett and Koller 2011).

RQ4 Agreement, as a consequence of previous discussion based on information and the confrontation of different points of view, is present when value innovation is present

With regard the way that judgements, which lead teams to build alternatives and make a decision, are based on different cognitive skills, two have received recent scholarly attention: intuition and the use of analogies.

Intuition is considered by scholars a relevant cognitive skill to identify and create opportunities. This task of sensing new opportunities requires the interaction between reflexive (e.g., intuition, implicit association) and reflective (e.g., explicit) reasoning (Gavetti and Rivkin 2007; Lieberman 2000, 2007). Subsequently, Hodgkinson and Healey (2011: 1506) propose that 'organizations that incorporate intuition into their repertoire of sensing capabilities will identify and respond to

opportunities and threats more effectively than organizations that rely solely on analytic approaches'.

RQ5 Intuition is present when value innovation is present

The second cognitive skill that is considered by scholars as relevant in the process of sensing and creating value innovation is analogical thinking, which involves the comparison of a novel situation to one previously faced Then it seems necessary to gain a better understanding of the way individuals and teams draw analogies and give room to recognize the reliance on creative processes to form 'mental leaps' between novel and familiar strategic problems via implicit reference to the abstract concepts that link them. To have a proper consideration of the role of analogy in the process of sensing and generating value innovation it is inescapable to clearly differentiate the way analogy is built and introduced in the decision process. On one hand, as Gavetti et al. (2005) show, executives often use one single analogy to guide their strategic thinking. Although frequent, this approach can sometimes mislead decision makers. As Dubin and Lovallo (2008) point pout, the predictive power of analogy depends on the deep structural similarities between the two compared cases or events. On the other hand, recent research shows that there are other more reliable ways of building analogies (Lovallo et al. 2012). This process is based on explicit and structured heuristics and usually relays on a broad set of past cases. In this chapter, due the nature of the simulation and team features, the use of analogies is based on single case and based on implicit thinking.

RQ6 The use of analogies is present when value innovation is present

As a summary in Table 1 conditions considered to sense and generate value innovation are shown.

Table 1 Description outcomes and conditions

Condition	Brief description	Source
Range of alternatives to be considered	Number of different alternatives that are stated and considered	Kim and Mauborgne (2005), Lovallo and Sibony (2006, 2010) and Hodgkinson and Healey (2011)
Description, analysis and discussion of alternatives	Number of stated alternatives that are described in detail, analysed and discussed	Kim and Mauborgne (2005) and Levinthal (2011)
Use of formal methods	Use of formal tools and processes: mathematical; statistical; logic; visual	Kim and Mauborgne (2005), Lovallo and Sibony (2010), Ries (2011) and Bardolet et al. (2011)
Level of agreement	Team agreement about the different elements of the chosen alternative	Lawson and Price (2003), Kim and Mauborgne (2005), Dye et al. (2008) and Lovallo and Sibony (2010)
Use of intuitive reasoning	Alternatives are chosen/discarded by intuitive reasoning	Gavetti and Rivkin (2007), Lieberman (2000, 2007), and Hodgkinson and Healey (2011)
Use of analogies with past experience	Alternatives are chosen/discarded by analogy with past experiences	Gavetti et al. (2005), Dubin and Lovallo (2008) and Lovallo et al. (2012)

3 Methodology

Due to the exploratory nature of the research questions and the qualitative nature of the research design, *fsQCA* is considered as a proper analytical method. The Qualitative Comparative Analysis was originally developed by Ragin (1987, 2000, 2008) and is used to analyse complex causality. QCA can be used to explain complex phenomena through the identification of conditions or configurations of conditions that are sufficient or necessary for the phenomenon to take place.

FsQCA (Ragin and Fiss 2008) requires the calibration of the conditions (variables) into values between 0 and 1. In this case, due to the very exploratory nature of the research, and due to the privileged position of the researchers as an external observers, the method of calibration implied a higher involvement of the researchers, who were in charge of assigning a value within the 0–1 range to the data available. This procedure entails more work because the researchers need to use their knowledge of the case and available sources to be able to successfully calibrate the data. The calibration was carried out separately and the differences were subsequently discussed and a definitive value was assigned.

Using consistency and coverage thresholds, the researchers then identify the configurations or conditions that are sufficient or necessary for the outcome of interest. Consistency refers to the degree to which a condition belongs to a configuration and to the outcome. A low level of consistency is not acceptable. The common consistency threshold value is set at 0.75 or 0.8. In contrast, a low coverage –the measure that indicates the number of cases a configuration explains can be low because even if the configuration only explains a few cases, it might still hold value for the analysis in context. A condition or configuration is sufficient when the outcome takes place every time the condition exists. In contrast, a condition is necessary when it appears in all instances of the outcome. Sufficient conditions are rare and do not rule out other combinations. That is, a sufficient condition may explain the outcome by itself, but the same outcome may be explained by other configurations of conditions. This principle is known as equifinality (Ragin 2000).

Another advantage of fsQCA is that it allows the analysis of asymmetric relationships. Alike, it measures the combined effect of multiple variables on an outcome instead of focusing on the individual effect of each of the variables on its own (Roig-Tierno et al. 2017).

4 Sample and Calibration

Data comes from a group of 104 master degree students form Valencia University. They were grouped in twenty six teams of four people that play the *Stratx Blue Ocean Simulator*©. This strategy simulator is based on the *Blue Ocean Strategy* book from Kim and Mauborgne (2005). The simulator leads each team to make nine

decisions along nine theoretical years—periods—: three in a mature or *'red market'* (Y41–Y43), three in order to create a totally new market through product value innovation (Y44–Y46), and three last decisions focused on creating value innovation through service and delivery (Y47–Y49). Then, due to the structure of the experiment, research questions 1 to 4 are analysed twice, in Y44–Y46 and in Y47–Y49 periods. Research question 5 is analysed for the Y44–Y46 time spam and research question 6 is examined for the Y47–Y49 time lapse.

Besides information about the firm and the industry, the simulator gives to each team the same qualitative data about non-customers and their unmet needs. The report shows field data gathered through a qualitative ethnographic survey, which came from the collection of different opinions and direct observations. Then the team should embark on an exercise to sense and quickly seize totally new markets where competition doesn't exist. At the end of each period (Y43, Y46 and Y49), the simulator itself offers a set of key performance indicators that measure different dimensions of performance, being one of them the accuracy of the new product/service to meet customer's real needs (in Y46 and Y49).

At the end of each period, every team filled up a questionnaire that ask about: *emotions* they experienced; team behaviour in relation to the *consideration and analysis of alternatives*; different *analytical techniques and tools* applied through the decision process; level of *agreement*—with regard product design, cost, price, marketing budget, retailing, geographic expansion, corporate projects—; the use of *intuitive thinking;* and the use of *analogies with respect to other past experiences*. Questionnaires were filled up with the support (if needed) of teachers, who have been observing and following teams. In this sense, the teacher role is to contribute, as an external observer, to the accuracy of the data retrieved through the questionnaire. Next in Table 2 outcome and conditions are presented and briefly described

Table 2 Description outcomes and conditions

Outcomes		Source
fs_VI	The proposed Strategy Canvas at end of the round is close to the "Ideal" one	Simulator dashboard
~fs_VI	The proposed strategy canvas at end of the round is far from the "Ideal" one	
Conditions		
fs_intuit	Alternatives are chosen/discarded by intuitive reasoning	Questionnaire and direct observation
fs_past	Alternatives are chosen/discarded by analogy with past experiences	
fs_mat-est	Use of formal tools: mathematical/statistical/logic/visual tools	
fs_alt-con	Number of alternatives considered	
fs_alt-an	Number of alternatives that were described in detail, analysed and discussed	
fs_agree	Team agreement about the different elements of the chosen alternative	

as well as the source of data. In order to avoid observer bias, two teachers observe team behaviour and separately assess team responses to questionnaires.

According to Ragin and Fiss (2016), the steps to carry out the process of calibration consist on conceptualize the causal conditions and the outcome and to allocate membership scores. Thereby, the outcome *value innovation* is calibrated using the method proposed by Ragin and Fiss (2008) establishing three cut-off points based on the 90, 50th and 10th percentiles (Misangyi and Acharya 2014; Palacios-Marqués et al. 2016; Kraus et al. 2016). Because conditions *fs_intuit, fs_past, fs_mat-est* were appraised through a five-point liker scale, the following cut off points were established (5, 3, 1). The conditions *fs_alt-con* and *fs_alt-an* were calibrated depending on the number of alternatives. The cut off points were established at (4, 3, 1) for *fs_alt-con* and (3, 2, 1) for *fs_alt-an*. Finally, for the condition *fs_agreement*, the following cut off points were established (7, 4, and 1).

5 Analysis of Necessary Conditions

The necessary conditions are especially important since the outcome (value innovation) cannot occur without its presence (Dul 2016). Thus, Table 3 presents a necessary analysis. In this research, the analysis has been conducted using the software fsQCA 3.0 (Ragin and Sean 2016).

In order for the condition to be deemed necessary, the consistency must be 0.9 or higher (Schneider et al. 2010). As illustrated in Table 3, there is no value that exceeds the 0.9 threshold. As a result, it can be argued that there aren't any necessary conditions. Thus, there is no condition a team should present necessary to sense and generate value innovation or lack of value innovation. So it will be a combination of conditions that are sufficient for reaching the outcome.

Table 3 Analysis of necessary conditions for Y46

Output	fs_VI		~fs_VI	
Conditions tested	Consistency	Coverage	Consistency	Coverage
alt_con	0.546512	0.597458	0.408397	0.453390
~alt_con	0.500000	0.454225	0.637405	0.588028
alt_an	0.648837	0.545277	0.794656	0.678176
~alt_an	0.617054	0.747418	0.467176	0.574648
Agree	0.536434	0.535604	0.607634	0.616099
~agree	0.615504	0.607034	0.541985	0.542813
mat-est	0.843411	0.560536	0.800763	0.540443
~mat-est	0.308527	0.603945	0.348855	0.693475
Intui	0.688372	0.524823	0.688550	0.533097
~intui	0.387597	0.550661	0.386259	0.557269

Note: The symbol (~) indicates the absence of condition

Table 4 Analysis of necessary conditions for Y49

Output	fs_VI		~fs_VI	
Conditions tested	Consistency	Coverage	Consistency	Coverage
alt_con	0.315436	0.470000	0.329545	0.580000
~alt_con	0.718121	0.475556	0.698864	0.546667
alt_an	0.744967	0.560606	0.668324	0.594066
~alt_an	0.460571	0.540354	0.505682	0.700787
agree	0.791107	0.525056	0.566761	0.553782
~agree	0.291107	0.431592	0.502841	0.610871
mat-est	0.746644	0.511788	0.707386	0.572743
~mat-est	0.376678	0.521487	0.397017	0.649245
past	0.748322	0.459084	0.850852	0.616572
~past	0.375000	0.680365	0.253551	0.543379

Note: The symbol (~) indicates the absence of condition

As well, in Table 4 we present the analysis for necessary conditions for year 49. As could be seen, there is no value that exceeds the 0.9 threshold. Again, there is no condition a team should present or accomplish which is necessary to sense and generate value innovation or lack of value innovation. So it will be a combination of conditions that are sufficient for reaching the outcome.

6 Analysis of Sufficient Conditions

A sufficient condition implies that a condition or combination of conditions can reach the outcome by itself. On the contrary, a condition considered necessary implies that the condition must always be present (Fiss 2007; Schneider and Eggert 2014).

Specifically, this research will analyse four models: two for Y44–Y46 period and two for Y47–Y49 time lapse.

With regard Y46, on the one hand we analyse the causal configurations that are sufficient to reach the outcome (model 1), that is, patterns leading teams to sense and generate a new product for a totally new market.

$$\text{Model 1: fs\_VI} = \text{f}(\text{fs\_alt-con},\ \text{fs\_alt-an},\ \text{fs\_mat-est},\ \text{fs\_agree},\ \text{fs\_intuit})$$

On the other hand, model 2 examines which configurations lead to teams to fail in their effort to sense and generate a new product able to meet the needs of an unattended market.

$$\text{Model 2: } \sim\text{fs\_VI} = \text{f}(\text{fs\_alt-con},\ \text{fs\_alt-an},\ \text{fs\_mat-est},\ \text{fs\_agree},\ \text{fs\_intuit})$$

One of the main characteristics of comparative qualitative analysis is that the result or outcome can be achieved by different paths or causal configurations—

Table 5 Analysis of sufficient conditions for the presence of value innovation at the end of Y46

Frequency cut-off: 1.00 Consistency cut-off: 0.836066	Raw coverage	Unique coverage	Consistency
fs_alt-con*~fs_intuit	0.21	0.17	0.87
fs_agree* fs_alt-con*fs_mat-est	0.23	0.19	0.86

Solution coverage: 0.40
Solution consistency: 0.88
Note: The symbol (~) indicates the absence of condition

Table 6 Sufficient conditions for the absence of value innovation at the end of Y46

Frequency cut-off: 1.00 Consistency cut-off: 0.836066	Raw coverage	Unique coverage	Consistency
~fs_intuit*~fs_alt-con*~fs_agree	0.17	0.15	0.92
fs_agree*~fs_alt-con*~fs_alt-an*~fs_mat-est	0.12	0.12	1

Solution coverage: 0.32
Solution consistency: 0.95
Note: The symbol (~) indicates the absence of condition

equifinality—(Ragin 2000). In this line we can see how in both, Tables 5 and 6 there are four configurations for the presence and absence of value innovation.

Table 5 contains the fsQCA intermediate solution. For each configuration of casual conditions, this table shows raw and unique coverage, and consistency. In this solution, the coverage and consistency are 0.40 and 0.88 respectively; good fit parameters (Eng and Woodside 2012; Ragin 2008).

As could be seen in Table 5 two combinations of conditions are given when the analysed teams sense and generate value innovation. The first one reveals that, when teams sense and generate value innovation, a wide range of alternatives are considered and that the alternatives where neither chosen nor rejected following intuitive reasoning. The second one reveals that a wide range of alternatives are considered, that there is agreement about the implemented strategy and that the team uses formal analysis based on different analytical tools. Then, in both combinations the consideration of a wide range of alternative solutions is present.

Results from Model 2 analysis are presented in Table 6. As could be seen, two combinations of sufficient conditions are considered. The first one reveals that the absence of intuitive reasoning as well as lack of a wide range of alternatives to be considered, and lack of agreement is present when teams fail to sense and generate value innovation. Alike, the second combination shows that the presence of agreement jointly with lack of a wide range of alternatives to be considered, lack of detailed description and analysis of such alternatives and lack of formal analysis, are conditions given when teams fail to sense and generate value innovation.

These results show that both, the absence of a wide range of alternatives to be considered and lack of agreement, as well as, agreement in the absence of proper alternative formulation and analysis, are combinations that lead to failure in sensing and generating value innovation.

With regard the analysis of models 3 and 4, we have introduced one change in the set of conditions. That is, we leave intuition—*fs_intuit*—and introduce the use of analogies with past experience to choose or reject alternatives—*fs_past*—. Here is important to remember that Y-47–Y49 is the second round where teams face the challenge of sensing and generating value innovation, and as a consequence they have previous and recent experience to compare with.

Model 3 examines which set of conditions is present when teams succeed in their effort to sense and generate a new service able to meet the needs of an unattended market in Y47–Y49 period.

$$\text{Model 3: fs\_VI} = \text{f}(\text{fs\_alt-con},\ \text{fs\_alt-an},\ \text{fs\_mat-est},\ \text{fs\_agree},\ \text{fs\_past})$$

Alike, model 4 examines which set of conditions are present when teams fail in their effort to sense and generate a new service able to meet the needs of an unattended market in Y47–Y49 time span.

$$\text{Model 4: } \sim\text{fs\_VI} = \text{f}(\text{fs\_alt-con},\ \text{fs\_alt-an},\ \text{fs\_mat-est},\ \text{fs\_agree},\ \text{fs\_past})$$

As results show in Table 7, in all two combinations the use of analogies to make decisions is absent when teams succeed in sensing and generating value innovation. Again it appears as relevant that teams consider, analyse and reach agreement in every aspect of strategy.

With regard model 4, the lack of sufficient analysis in terms of number of alternatives considered and description and analysis of such alternatives, as well a lack of agreement are conditions present when teams fail to sense and generate value innovation (Table 8).

Table 7 Sufficient conditions for the presence of value innovation at the end of Y49

Frequency cut-off: 1.00 Consistency cut-off: 0.832237	Raw coverage	Unique coverage	Consistency
~fs_past*fs_alt-con*fs_agree	0.27	0.13	0.85
~fs_past*fs_mat-est*fs_agree*fs_alt-con	0.17	0.02	0.99

Solution coverage: 0.57
Solution consistency: 0.84
Note: The symbol (~) indicates the absence of condition

Table 8 Sufficient conditions for the absence of value innovation at the end of Y49

Frequency cut-off: 1.00 Consistency cut-off: 0.973856	Raw coverage	Unique coverage	Consistency
~fs_mat-est*~fs_alt-con*fs_agree	0.23	0.13	0.98
fs_mat-est*fs_agree*~alt-an	0.12	0.08	0.74

Solution coverage: 0.38
Solution consistency: 0.88
Note: The symbol (~) indicates the absence of condition

7 Conclusions

Despite the effort to understand the analytical and behavioural process that lead teams to formulate alternatives and make decisions, the road ahead is still long. Previous research devotes effort to identify the elements that contribute to properly make complex decisions in situations when incomplete information and uncertainty are the main features. Alike, previous research gives evidence about the direct impact of each condition on decision success. The goal of this chapter is getting a better understanding about which combination of decision processes and cognitive skills are present when teams make successful decisions.

The kind of decision under study is this research is about sensing and generating value innovation (Kim and Mauborgne 2005), that is, creating a new value proposition for an unattended market. The main features of this decision are: uncertainty about the real size of the new market, getting a proper understanding of the customer real needs and developing an inductive reasoning process from field information.

The research method is experimental and exploratory by its very nature. Data come from direct observation and also was retrieved from a questionnaire filled-up by twenty-six teams of master degree students in Valencia University, Spain. They run the *Blue Ocean Simulator*© as a part of a subject focused on getting a better understanding of the mind-set behind the process of Schumpeterian innovation proposed by recent and famed contributions like: *Blue Ocean Strategy* (Kim and Mauborgne 2005), *Lean Start-Up* (Ries 2011) or *Frugal Innovation* (Radjou and Prabhu 2015).

Departing from previous academic contributions we identify a set of conditions that contribute to a better strategy decision making and analyse it using fsQCA. This method is suitable to reach our research goal because its qualitative nature, the sample size, and that the goal is to identify different combinations of conditions that are given when the desired output is present. Alike this method don't presupposes reverse causality and is able to look for the set of conditions that appear when the output is absent.

The conditions considered are: (1) the number of different alternatives considered; (2) the number of such alternatives that were described and discussed in detail; (3) the use of formal tools in order to organize and analyse information; and (4) the level of agreement between team members with regard the chosen alternative. Also to cognitive skills are considered given its relevance in previous research, that is: (5) intuitive reasoning; and (6) the use of analogies.

Results show that there is no single necessary condition to reach neither success nor failure. So it depends on a proper combination of conditions. This conclusion is coherent with Lovallo and Sibony (2010) that plead for the development of proper decision process that give room to constructive conflict and discussion that prevents from poor cognitive styles and cognitive bias.

Our results show that the consideration of a wide set of alternatives, the detailed description and analysis of a sufficient number of alternatives, the use of formal

tools to retrieve, organize, frame and properly analyse inklings, and the subsequent achievement of agreement are conditions that are present when team succeed in sensing and generating value innovation.

On the contrary, lack of consideration and analysis of a sufficient range of alternatives, and strong agreement when the previous conditions are absent, happen when teams fail to sense and generate value innovation. Alike, results show that neither intuitive cognition, nor analogies to past experiences are present when team achieve success. While this results, with regard the use analogies, are coherent with part of recent research (Lovallo et al. 2012), they contradict the theoretical propositions made by Hodgkinson and Healey (2011) with respect to intuitive cognition.

In any case, these results should be considered as a starting point for further research. Limitations are evident due to the exploratory nature of an analysis made over a very specific set of data. That is, the sample is made of master degree students and come from a strategy simulator game.

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Part II
Entrepreneurial Personality, Traits and Gender

The Role of the Entrepreneurial Personality in New Ventures

Xuemei Xie, Jiuchang Lv, and Yuchen Xu

Abstract For new ventures, entrepreneurs must obtain critical support, such as financial, material, and social resources, to succeed and thrive. These demands suggest that successful entrepreneurs have distinct personal characteristics that allow them to excel. Previous work has found particular personality traits that are inherent in entrepreneurs. However, the role of entrepreneurial personalities has been largely ignored, especially from the perspective of negative personality traits. Thus, in this chapter, we will examine the role of entrepreneurial personality underlying the success of new ventures. Specifically, we will analyze both the positive and negative aspects of the entrepreneurial personality. As it pertains to the positive traits, we will present a number of factors, including emotional intelligence, hardiness, entrepreneurial self-efficacy, and warmth. These personality traits can enhance an entrepreneur's willingness to take initiative, tolerate risk, and deal with setbacks, enabling new ventures to continue to innovate, renew, and keep pushing forward, even after having achieved success. As for the negative traits, we will discuss several factors including narcissism, overconfidence, and fear of failure. Given the costly repercussions of these negative characteristics, we will examine the possible impacts of these attributes on the success or failure of new ventures. We find that entrepreneurial positive traits are conducive to the growth of new ventures, while the negative personality traits hinder the survival and development of start-ups. Our research provides a sharper theoretical framework for the research of entrepreneurial personality.

Keywords Entrepreneurial personality • Personality traits • New ventures

1 Introduction

Entrepreneurship, which provides new products and services to the community, promotes national innovation and solves employment problems (Vita et al. 2014; Welsh et al. 2016). It also plays a vital role in a country's economic development

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and social prosperity (Bosma et al. 2009), thus entrepreneurship has become a global phenomenon, growing rapidly in recent years (Acs et al. 2005).

With the rapid development of entrepreneurial activities, academic interest in this field of economics, sociology, business, and psychology is increasing (Hisrich et al. 2007). Personality theory was one of the early classical studies in this research. In 1921, American psychologists Floyd H. Allport and Gordon W. Allport first proposed the concept of personality traits in their book "*Personality Traits: Their Classification and Measurement*" (Allport and Allport 1921). From then on, research on the personality theory gradually became more systematic and scientific. Given that personality theory plays an important role in examining humans' behaviors and perception, many previous studies have suggested that the individual psychological disposition of an entrepreneur is an essential factor in determining whether a commercial start-up will achieve success (Espiritu-Olmos and Sastre-Castillo 2015; Obschonka et al. 2013).

Thus, entrepreneurial personality is an important factor for the success or failure of a new venture. In the 1990s, researchers reached a consensus on the personality traits, described as the five-factor model (Goldberg 1981). The Big Five Personality Model, which includes five dimensions—extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience—provides a useful framework for examining the relationship between personality traits and entrepreneurship. Further, Hogan et al. (1994) argued that the Big Five Personality Model describes the personality traits when people are working at their best, that is, "the bright side of personality."

However, the Big Five Personality Model cannot be used to measure the relationship between individual personality traits and particular behavior in situations of stress and change. Therefore, some scholars have explored a different avenue that concerns negative personality traits in the workplace—"the dark side of personality." Hogan et al. (1994) formally introduced the "the dark side of personality" in the early 1990s. They argued that negative personality traits, which refer to traits tending to create personality disorders under stress or crisis, such as jealousy or narcissism, often undermine interpersonal relationships, reduce subordinates' loyalty, and hurt colleagues' trust. Generally speaking, negative personality traits make it impossible for entrepreneurs to build and maintain efficient organizations, which is one of the main reasons for the ineffectiveness and failure of new enterprises.

Moreover, previous literature has indicated that personality is a valid predictor of employee job performance (e.g., Chamorro-Premuzic and Furnham 2010), and is closely related to a company's managerial levels and performance outcomes (Hurtz and Donovan 2000). Similarly, Staniewski et al. (2016) argued that there exists a significant relationship between entrepreneurial personality traits and a company's success. Therefore, entrepreneurial personality is an important factor for the success of a business.

Based on previous literature in the field of entrepreneurship and personality, using the method of qualitative analysis, this chapter focuses on examining the impact of entrepreneurial personality traits on new ventures' growth. As Miller

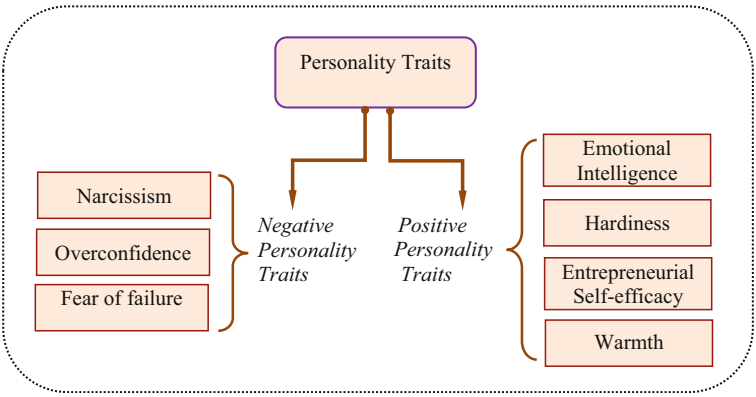

Fig. 1 Entrepreneurial personality traits

(2015) has pointed out that positive and negative personality traits should be included in the analysis of entrepreneurial personality, we aim to classify the entrepreneurial personality traits (positive and negative) that have different effects on the establishment and success of an enterprise (Rauch and Frese 2007). In so doing, we will examine the role of positive personality traits (i.e., emotional intelligence, hardiness, entrepreneurial self-efficacy, and warmth) and negative personality traits (i.e., narcissism, overconfidence, and fear of failure) as they pertain to the entrepreneurial process (see Fig. 1). We argue that entrepreneurs with positive personality traits can enhance team cohesion, overcome difficulties and pressures, and promote the survival and development of new ventures. In contrast, negative personality traits will influence the rational judgment of the entrepreneurs, lead to the wrong entrepreneurial decisions, and hinder the growth of new ventures. We then put forward relevant recommendations to improve entrepreneurial personality management.

2 Positive Personality

According to personality theory, everyone has various personality traits, such as hardiness (Bartone et al. 2009), warmth (Cuddy et al. 2011), and emotional stability (Cheng et al. 2016). As they pertain to our discussion here, entrepreneurial personality traits affect the way one does things, one's management style, and one's performance. A large amount of literature has emphasized the importance of the personality traits that are associated with successful entrepreneurship (e.g., Luca et al. 2013; Staniewski et al. 2016). Hence, this chapter will discuss the impact of positive entrepreneurial personality traits on a new venture, including emotional intelligence, hardiness, entrepreneurial self-efficacy, and warmth.

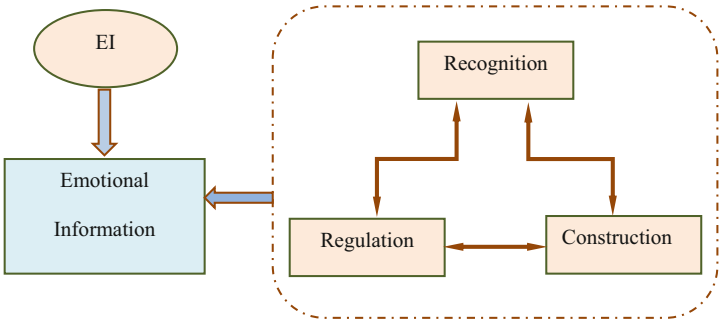

Fig. 2 Framework of EI

2.1 Emotional Intelligence

Emotional intelligence (EI) was presented by the famous psychologist Daniel Goleman in his book "*Emotional Intelligence*," in which he stated that the fundamentals of EI are self-awareness, self-management, social awareness, and the ability to manage relationships (Goleman 1996a). EI can be defined as the capacity to process emotional information accurately and efficiently, including material that is relevant to the recognition, construction, and regulation of emotion in oneself (Salovey and Mayer 1990) (Fig. 2). EI, which is closely related to interpersonal relationships and the ability to control emotions, has gradually become a fundamental unit for examining how entrepreneurs achieve success.

2.1.1 The Impact of Entrepreneurial EI on New Venture Growth

While building an enterprise, entrepreneurs need to be able to deal with all types of people. EI provides entrepreneurs with competencies that are necessary to navigate through the stress of change. Due to the huge pressure and uncertainty in the process of entrepreneurship, EI becomes the key for entrepreneurs as they build their businesses. Thus, it is clear that an entrepreneur's EI has an important impact on the success of their enterprise (Goleman 1996b). On the one hand, EI has been found not only to advance one's interpersonal skills but also provides higher levels of effective communication (Hendon et al. 2017), which allows an organization to maintain successful relationships and enhance entrepreneurial team cohesion. On the other hand, entrepreneurs with a high level of EI have greater self-management and self-restraint abilities, which can gain the employees' sense of trust and allow the entrepreneurs to master their interactions with others in a more effective manner (Wong and Law 2002), thus improving team cohesion. In addition, entrepreneurs with a high level of EI can create a relevant management system from the employees' point of view, and adjust it according to the psychological and emotional responses of the employees to improve their work enthusiasm. In summary, entrepreneurs with a high level of EI play an important role in the survival and development of new ventures.

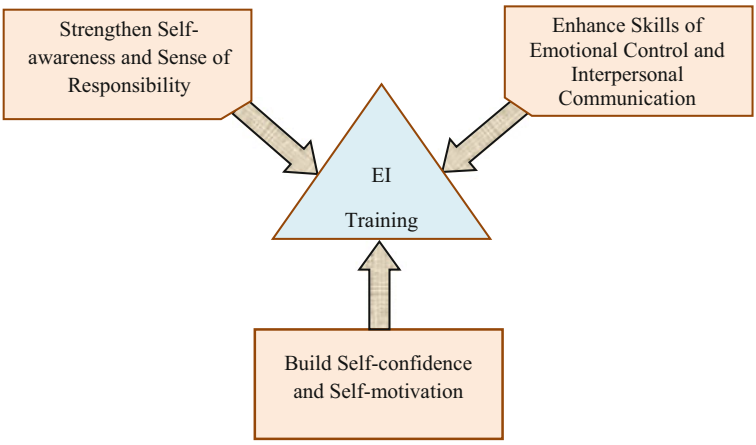

Fig. 3 EI training map

2.1.2 The Management of Entrepreneurial EI

According to the above analysis, encouraging the growth of entrepreneurs' EI is an effective way to improve the growth of new ventures. Managing and developing the ability of entrepreneurs' EI can be accomplished in various ways (Fig. 3). First, entrepreneurs can strengthen their self-awareness and cultivate their sense of responsibility. More specifically, entrepreneurs need to learn to correctly self-evaluate to fully understand their strengths and weaknesses, and to be soberly aware of their responsibilities and their mission in the entrepreneurial process. Second, entrepreneurs can enhance their skills of emotional control and interpersonal communication. For one thing, entrepreneurs should master control over their emotions in order to calmly deal with unexpected issues in the workplace. Additionally, entrepreneurs should learn to be agreeable when dealing with others, appreciate the abilities and talents of others, show respect for different opinions, all of which help to establish good interpersonal relationships. Third, entrepreneurs should learn to appreciate themselves and build their self-confidence and self-motivation to maintain a lasting entrepreneurial passion.

2.2 Hardiness

Hardiness is an attribute of certain people that allows them to respond effectively to stress demands so that they can perform better (Bartone et al. 2009) and remain healthier (Soderstrom et al. 2000). As hardiness is an important personality trait studied in relation to stress (Delahaij et al. 2010), researchers have found that it is part of a positive personality that integrates a person's cognition, behavior, and

emotion. Individuals with this personality trait often maintain a positive, optimistic, and persevering emotional state.

2.2.1 The Impact of Entrepreneurial Hardiness on New Ventures Growth

Hardiness can motivate individuals to allocate sustained personal effort to accomplishment goals (Baum and Locke 2004). Entrepreneurs with a high level of hardiness have stable emotional control, and can face difficulties positively. Kobasa (1979) assessed the role of hardiness in mental health, stating that managers with a high level of hardiness have fewer problems regarding their physical and mental health than managers with a low level of hardiness. Rhodewalt and Zone (1989) also indicated that hardiness can reduce the effects of stress on individuals' physical and psychological health. Further, as Bartone (1999) showed, the higher one's level of hardiness is, the stronger one's self-control and self-management are. Given that self-control plays an important role in goal creation and adoption (Fujita 2011), entrepreneurs who demonstrate a high level of hardiness tend to be the most highly valued. Moreover, entrepreneurs with a high degree of hardiness not only have better physical and mental health but also have a strong ability to withstand pressure under unfavorable conditions while building their enterprises.

2.2.2 The Management of Entrepreneurial Hardiness

The ability to manage and develop entrepreneurs' hardiness can be accomplished in the following ways (Fig. 4). First, entrepreneurs should broaden their self-education. The level of self-evaluation and self-regulation has important effects on the formation and development of an individual's personality (Day and Unsworth 2013; Hiller and Hambrick 2005). Thus, to develop hardiness, entrepreneurs need to maintain a positive attitude. Second, entrepreneurs should enhance their physical exercise. Adhering to physical exercise over a long period of time allows an entrepreneur to be emotionally stable in the face of difficulties. Third, entrepreneurs need to learn to master their emotions and regulate their moods to improve their hardiness, allowing them to face challenges with a positive attitude.

2.3 Entrepreneurial Self-Efficacy

Starting in the 1990s, the theory of self-efficacy was introduced into the research of entrepreneurship, and thus, the concept of entrepreneurial self-efficacy emerged. Entrepreneurial self-efficacy is defined as an individual's belief that they can effectively perform tasks and activities central to starting and running a new venture (Baron et al. 2016; Chen et al. 1998). As a personality characteristic

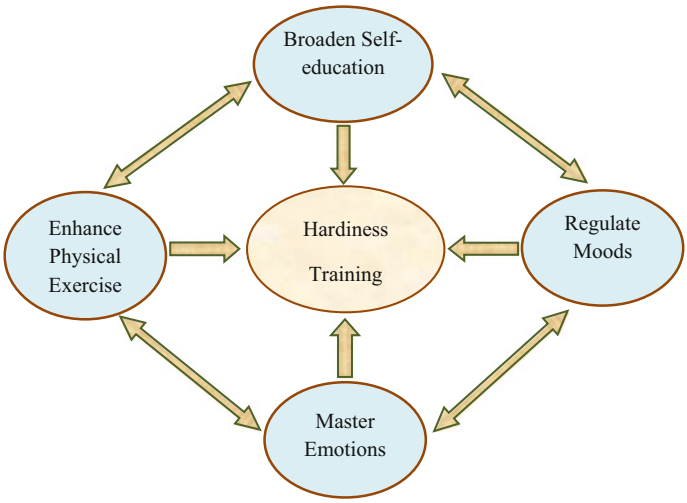

Fig. 4 Hardiness training map

(Littunen 2000), self-efficacy is positively correlated with performance (Spieker and Hinsz 2004), and it plays an influential role in determining an individual's level of effort and their amount of perseverance (Chen et al. 2004).

2.3.1 The Impact of Entrepreneurial Self-Efficacy on New Ventures Growth

Previous work has revealed that entrepreneurial self-efficacy has a positive impact on entrepreneurs' behavior and new ventures' growth (Hmieleski and Corbett 2008). First, entrepreneurial self-efficacy can help an entrepreneur correctly understand their own ability to influence activities in the entrepreneurial process. Second, high levels of entrepreneurial self-efficacy are related to the success of new ventures (Baum and Locke 2004; Belso-Martínez et al. 2017; Soriano 2005). Third, entrepreneurs face a lot of pressure in the process of entrepreneurship, and thus, those with higher entrepreneurial self-efficacy will often be more optimistic and more confident in their entrepreneurial activities; they will actively and appropriately respond under tough circumstances, allowing them to overcome difficulties and achieve success.

2.3.2 The Management of Entrepreneurial Self-Efficacy

Entrepreneurs can develop and manage their ability of entrepreneurial self-efficacy using the following suggestions (Fig. 5). First, entrepreneurs should actively participate in entrepreneurial activities to enrich their business experiences. Experiencing successes and failures are the most basic ways to gain self-efficacy.

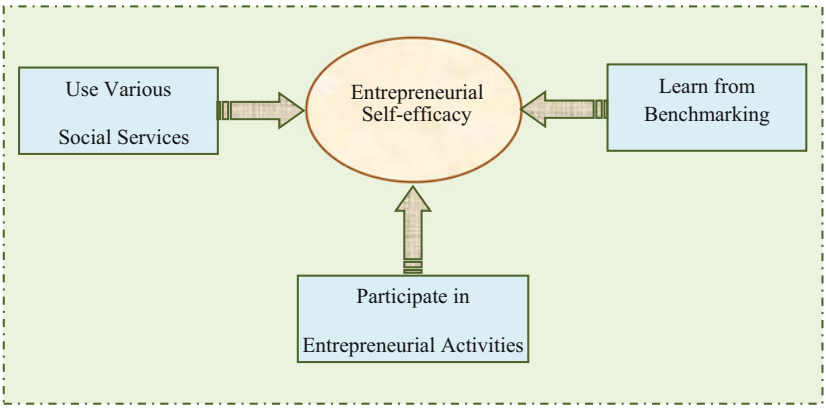

Fig. 5 Training map for entrepreneurial self-efficacy

For example, the experience of entrepreneurial success can inspire entrepreneurial motivation, improve entrepreneurial capacity, and cultivate entrepreneurial self-efficacy. Second, entrepreneurs should learn from the entrepreneurial experiences of others' successful benchmarking in order to enhance their entrepreneurial motivation and improve their entrepreneurial self-efficacy. Third, entrepreneurs should make good use of various social services provided by intermediaries and some service platforms, including venture capital, information consulting, business training, business guidance, and other types of assistance.

2.4 Warmth

Warmth is defined as an emotional and psychological reaction to actively communicating with others (Bernritter et al. 2016). It tests a person's attitude regarding their interactions with others, whether they are willing to interact with people, and whether they are enthusiastic in the interpersonal process.

2.4.1 The Impact of Entrepreneurial Warmth on New Venture Growth

Entrepreneurship requires dealing with various types of people. Entrepreneurs with a high level of warmth are outgoing, warm, and cheerful, and they are kind and friendly. Given that warmth is a significant driver of consumer satisfaction, loyalty, and retention (Cuddy et al. 2011; Rust and Zahorik 1993), entrepreneurs with warmth can thus easily curry the favor of customers, and have the strong ability for cooperation and are adaptable to new situations. In addition, entrepreneurs with a high level of warmth can actively take care of their employees, which help them win the respect of their workers, and form positive, harmonious interpersonal relationships with them.

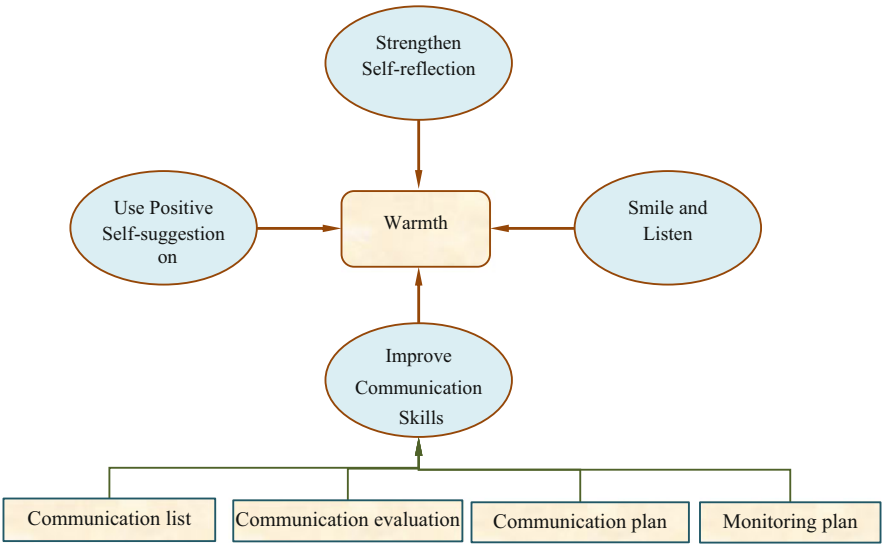

Fig. 6 Warmth training map

2.4.2 The Management of Entrepreneurial Warmth

It is necessary to consciously cultivate warmth to promote entrepreneurs' growth. Here, entrepreneurs should review the following recommendations (Fig. 6). First, entrepreneurs need to strengthen their ability to improve their self-awareness of interpersonal relationships. Second, entrepreneurs should actively use positive self-suggestions. If a person is always speaking negatively internally, they can easily fall into a vicious circle. Contrarily, if an entrepreneur repeats "I can" (instead of "I cannot") to motivate themselves, this bolsters their self-confidence. Third, entrepreneurs should improve their communication skills; this includes creating a list of communication situations and communication objects, evaluating their communication methods, and making, implementing, and monitoring communication plans. Finally, entrepreneurs should learn to smile more and listen more attentively. Facial expression is an important messenger in communications, and both smiling and listening can improve an entrepreneur's interpersonal relationships with their employees and business partners.

3 Negative Personality

Negative personality traits are those traits that tend to cause personality disorders under stress or in moments of crisis. Negative personality traits also have a great impact on entrepreneurs' decision-making processes, for example, when making wrong judgments or bad decisions regarding future opportunities. Some scholars

have examined the dark side of personality and have noted that it is closely related to the failure of new businesses (e.g., Furnham et al. 2013; Palaiou and Furnham 2014). This chapter will explore the impact of negative entrepreneurial personality traits, including narcissism, overconfidence, and the fear of failure, on new ventures' growth.

3.1 Narcissism

Narcissism is defined as excessive self-love, admiration, and exaggerated attention to the self (Guedes 2017). Narcissists who tend to show absolute self-confidence as well as excessive self-admiration (Resick et al. 2009), highly value their worth and accomplishments and are obsessed with power and recognition (Kashima et al. 2002; Tamborski et al. 2012). In addition, narcissists are also attracted to the idea of reaching a level of celebrity (Young and Pinsky 2006) and find tasks that support their feelings of superiority (Morf et al. 2000). Moreover, as Foster et al. (2009) have indicated, narcissistic individuals are more prone to risk-taking, and they differ from non-narcissistic individuals in that they perceive greater benefits deriving from risky behaviors.

3.1.1 The Impact of Entrepreneurial Narcissism on New Venture Growth

Scholars have not yet formed a unified opinion on the role of narcissism as it pertains to new ventures. Some believe that entrepreneurial narcissism has a positive role in promoting new businesses because they think narcissistic entrepreneurs tend to show strong social skills, vision, and personal charisma. These researchers generally believe that narcissistic entrepreneurs have good communication skills (King 2007; Rosenthal and Pittinsky 2006). They can influence people and make others accept their vision of the organization, thus creating strong performance for their companies. In addition, some researchers believe that narcissistic managers can enhance organizational cohesion, as they can apply their personal charm as needed (Deluga 1997). However, other scholars believe that entrepreneurial narcissism has an adverse effect on the growth of new ventures (e.g., Campbell et al. 2000). First, they find that narcissists are primarily motivated by the quest for leadership, allowing them to meet their needs and aspirations by gaining power (Glad 2002), thus their decisions are difficult to gain the approval of employees. Second, in team situations, narcissists tend to overestimate their own contributions and ignore those of others (Campbell et al. 2000), which makes it difficult for them to maintain relationships with others (Morf and Rhodewalt 2001).

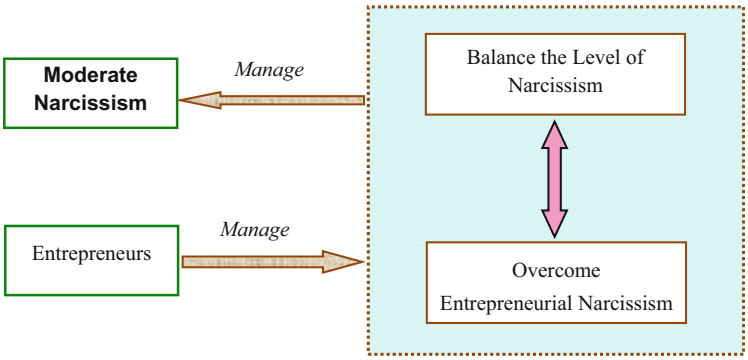

Fig. 7 Managing narcissistic traits

3.1.2 The Management of Entrepreneurial Narcissism

Although de Vries and Miller (1985) have indicated that narcissism is the most common feature of leadership, as it drives leaders to pursue power and influence, if entrepreneurs are not able to grasp their own degree of narcissism, it can have a negative impact on new venture growth. Therefore, entrepreneurs can manage their narcissistic personalities using the following suggestions (Fig. 7). First, an entrepreneur should overcome their "entrepreneurial narcissism" by listening to the wide variety of opinions of others, such as partners, employees, and peers. Second, an entrepreneur should attempt to balance their level of narcissism. Moderate narcissism is not a bad thing for an entrepreneur. However, with a high level of narcissism, it is easy to exaggerate one's own advantages and to ignore the role of others, which may negatively affect teamwork and cohesion in their companies.

3.2 Overconfidence

Overconfidence is the possession of inaccurate, overly positive perceptions of one's abilities or knowledge (Moore and Healy 2008). Prior work has suggested that highly confident individuals attain higher status (Kennedy et al. 2013).

3.2.1 The Impact of Entrepreneurial Overconfidence on New Venture Growth

Although prior research has suggested that overconfidence confers a higher social status (Kennedy et al. 2013), entrepreneurs with overconfidence are easily confused by false positive messages, and even ignoring possible deviations (Gibson and Sanbonmatsu 2004). This would be more apparent for start-ups under uncertain environmental conditions (Hayward et al. 2006). Overconfidence makes

entrepreneurs overestimate their knowledge, predictions, and personal abilities, and thus, the probability of failure becomes higher when facing potential opportunities (Bernardo and Welch 2001). In addition, an entrepreneur's overconfidence can easily lead to the blindness of investment (Segerstrom and Nes 2006). Some previous studies have also shown that entrepreneurs' overconfidence was negatively correlated with the survival rate of start-ups (Koellinger et al. 2007). Overall, overconfidence can interfere with entrepreneurs' rational judgments and decision-making, which can lead to the failure of start-ups (Åstebro 2003).

3.2.2 The Management of Entrepreneurial Overconfidence

It is important for entrepreneurs to manage their feelings of overconfidence, which can be accomplished using the following steps (Fig. 8). First, entrepreneurs need to gain more experience. Some studies have indicated that a person's level of overconfidence will decrease as their experience increases (Hayward et al. 2006; Van de Venter and Michayluk 2008). Therefore, entrepreneurs need to listen and learn more from others to accumulate greater experience. Second, Winkler and Poses (1993) have noted that when individuals lack comprehensive and accurate feedback regarding decision-making, their overconfidence increases. Hence, entrepreneurs need to evaluate events objectively. Third, because an individual's cultural environment is also an important factor that can affect their overconfidence, shaping good company culture with a moderate level of confidence and with objective evaluations is paramount.

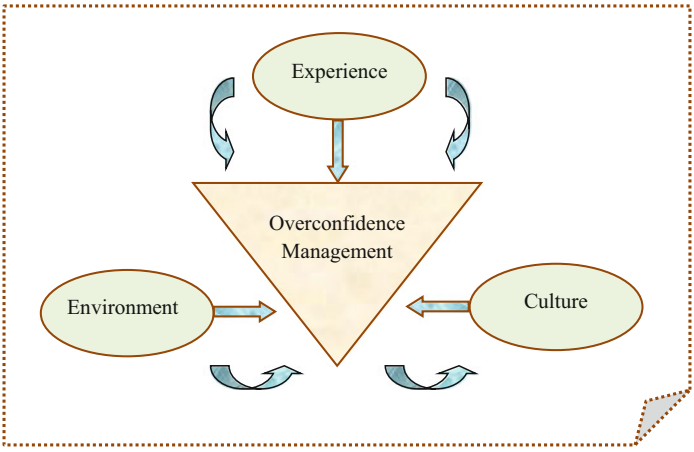

Fig. 8 Managing overconfidence

3.3 Fear of Failure

Since the essence of entrepreneurship is closely tied to uncertainty and risk-taking, an individual's fear of failure is a potent factor that can inhibit entrepreneurial entry (Caliendo et al. 2009). The individual's fear of failure is considered a self-evaluative framework that influences how he or she defines, orients to, and experiences failure in achievement situations (Heckhausen 1991).

3.3.1 The Impact of Entrepreneurial Fear of Failure on New Venture Growth

The fear of failure has attracted considerable attention in the entrepreneurship literature (e.g., Cacciotti et al. 2016; Morgan and Sisak 2016). Individuals who are prone to the fear of failure are always trying to avoid failure rather than trying to succeed (Atkinson 1957). Kollmann et al. (2017) have argued that fear of failure in entrepreneurs is a key to understanding individuals' withdrawal from entrepreneurial activities. In addition, the fear of fear is often accompanied by lower self-efficacy. For example, Bandura and Locke (2003) have indicated that constant failure can lead individuals to lower their goals and reduce their self-efficacy. In addition, it has also been shown that fear of failure perceptions negatively influence entrepreneurship as an occupation choice (Arenius and Minniti 2005). Overall, the fear of failure has a central influence on individuals' achievement motivation and their occupational aspirations (Burnstein 1963). Hence, entrepreneurs with a high fear of failure tend to doubt their abilities, rarely set goals, and choose low-risk tasks because there is a smaller chance of failure, which, of course, is not conducive to new venture growth.

3.3.2 The Management of Entrepreneurial Fear of Failure

Overcoming an excessive fear of failure is an essential task of entrepreneurs. Here, training is needed using the following concepts (Fig. 9). First, given that when goals are difficult to achieve, this may generate discouragement and reduce motivation (Baron et al. 2016), entrepreneurs should set specific, attainable goals for daily, weekly, and monthly periods. This will allow them to be better organized and to help them overcome their fear of failure. Second, entrepreneurs should learn how to reduce the amount of pressure they feel, and arrange their own time so as to maintain entrepreneurial passion. Finally, entrepreneurs should believe in themselves and not lose confidence in their own knowledge and abilities. Entrepreneurs who lack confidence will shape a failed image of themselves; for instance, when faced with difficulties or challenges, they can overestimate those difficulties, creating a situation where they are more likely to fail.

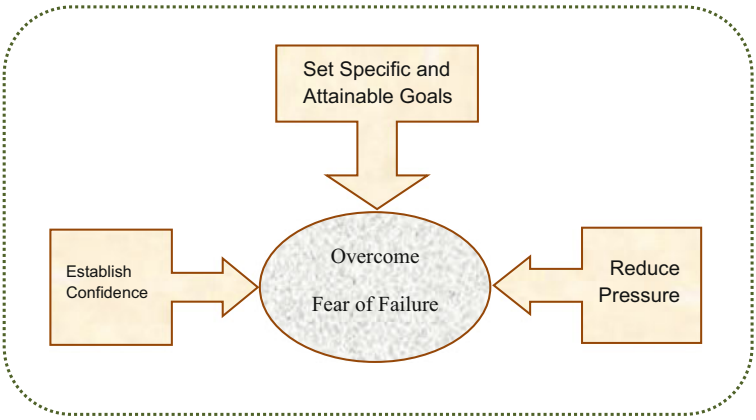

Fig. 9 Managing the fear of failure

4 Conclusion

In this chapter, we present a challenge for future researchers to build a stronger, more complete understanding of the role of the entrepreneurial personality. We find that positive entrepreneurial personality traits enable young companies to continue to innovate, open up new territory, and venture forth, even after having achieved success. Meanwhile, negative entrepreneurial personality traits make entrepreneurs ignore the impact of the environment and overestimate their abilities, which can easily lead to the failure of young companies. It should be noted that the influence of a particular entrepreneurial personality on a new venture is not an absolute, and we welcome many viewpoints. Overall, cultivating positive personality traits and managing negative ones are necessary for entrepreneurs in the process of entrepreneurship.

Thus, our findings present some theoretical contributions and practical implications. The first contribution is that we divide the entrepreneurial personality into positive personality traits and negative personality traits, and systematically analyze their constituent elements, which provide a sharper theoretical framework for the research of entrepreneurial personality. Moreover, we analyze the factors impacting the entrepreneurial personality, which deepen the application of personality theory in the field of entrepreneurship. Therefore, we suggest that entrepreneurs should actively cultivate positive personality traits and manage their negative personality traits effectively.

However, several limitations also need to be addressed. One limitation is that we only analyze the impact of personality traits of entrepreneurs on new ventures using the method of qualitative analysis. Future research need to use the empirical data or the method of meta-analysis to further verify our arguments. Moreover, we only discuss seven personality traits of entrepreneurs. However, there are other personality traits such as conscientiousness, passion, self-control, irresponsibility, or

hubris that also may influence new ventures' growth. Future research may explore more personality traits to provide a more complete understanding of how entrepreneurial personality affects new ventures' survival and growth.

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Intrapreneurs: Characteristics and Behavior

Antonia Mohedano-Suanes and Dolores Garzón Benítez

Abstract Intrapreneurship has become a relevant topic in literature as far as its impact on organizational performance is more and more often highlighted from very diverse points of view. The main goal of this chapter is introducing the specific personal and professional profile of intrapreneurs, considered as highly committed individuals motivated by innovation, continuous improvement and able to leader teams in the direction they foresee within the companies in which they work. This chapter will present the relevance and impact of intrapreneurship, the role and main characteristics of the intrapreneurs, their behavior and motivations, and finally some good practices will be exposed in order to encourage intrapreneurship within organizations.

Keywords Intrapreneurship • Motivation • Innovation

1 Introduction

Entrepreneurship is related to the so called entrepreneurs, who independently assume the risk of creating and managing a company, but it's also a concept related to intra entrepreneurs or intrapreneurs, employees in already existing companies, who actively participate in the identification and exploitation of business ideas for the organization in which they work (Bosma et al. 2013). Indeed, corporate entrepreneurship or intrapreneurship is settled on the idea of the intrapreneur.

In words of authors like Collins and Moore (1970), Zahra (1995, 1996) or Sharma and Chrisman (1999), through the process of intrapreneurship, the intrapreneurs impulse: Corporate venturing, Strategic renewal and/or Innovation. Following Sharma and Chrisman (1999), Corporate venturing implies the development of new corporate activities either creating new organizational entities (internal) or not (external). In the first case the new activity is inserted in one of the business units or creating a subsidiary one. In the second case, when external, the new

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activity is developed through an autonomous or semi-autonomous entity separated from the organization (joint ventures, spin-offs, or venture capital initiatives). Strategic renewal consists on modifying organization's business or corporate level strategy or structure. Renewal activities reside within an existing organization and are not treated as new businesses by the organization. The main difference between corporate venturing and strategic renewal is that: "...corporate venturing involves the creation of new businesses whereas strategic renewal leads to the reconfiguration of existing businesses within a corporate setting" (Sharma and Chrisman 1999: 19). Innovation means "creating and introducing new products, production processes, and organizational systems" (Zahra 1996: 1715). Innovation is considered a sufficient condition for intrapreneurship, but not a necessary condition, since both corporate venturing and strategic renewal can exist without innovation (Sharma and Chrisman 1999).

Intrapreneurship stands as a key aspect for the success and survival of companies (De Pablo 2015) surrounded by technological and social dynamism, the challenges of environmental care and the turbulence of financial markets. Some research provide evidence of the positive relationship between intrapreneurship and organizational performance in terms of higher customer satisfaction (Agca et al. 2012), higher shareholder value or earnings per share (Zahra 1993; Zahra et al. 1999; Salimath et al. 2008; Bierwerth et al. 2015), higher profitability of sales (Zahra and Covin 1995; Zahra et al. 2000), better positioning against competitors (Simsek and Heavey 2011), increased market share and increased company size (Antoncic and Hisrich 2004; Felicio et al. 2012), or overall management satisfaction with company performance (Bierwerth et al. 2015), among other advantages. Furthermore, Other works show that the effect of intrapreneurship on the performance of the company is reinforced in the long term (Zahra and Covin 1995; Wiklund and Shepherd 2003; Huse et al. 2005; Felicio et al. 2012).

Intrapreneurs allow their organizations to achieve the above mentioned advantages because they are an adequate channel to contribute and implement new ideas; act as catalysts, promoters and participate in the various activities of an innovation program; promote change in behavior and skills throughout the organization; promote cultural change in the organization; make it possible to keep an intrapreneurship program active and to signal to customers, partners and investors the innovative profile of the organization, increasing its reputation; and intrapreneurial efforts engage those key employees and drive them additional value from them (Ferrier 2015).

Therefore, identifying intrapreneurs among their employees becomes especially critical for organizations to motivate and support them in order to retain them in the company, and also to create a high performance working environment to strengthen the company's competitiveness (Kuratko and Hodgetts 2001).

Following, will go through these different fields: the main characteristics that define an intrapreneur's behavior as a leader, the practices that organizations can carry out to motivate and retain intrapreneurs, and the main conclusions drawn from the analysis.

2 The Characteristics of the Intrapreneur

In words of Kuratko and Hodgetts (2001), intrapreneurs are not necessarily "genious." They are individuals with an average or slightly above average intelligence rate. As explained below, successful intrapreneurs are characterized by the following traits: visionary and willing to tackle the status quo; know the internal and external organizational environment; strongly committed to their organization; are sincere and persevering; skilled negotiators; diplomatic and able to lead cross-functional teams; good communicators; visual thinking ability; take calculated risks; and high levels of self-efficacy.

The intrapreneur is a "visionary" leader, always looking for ways to do things better, trying to anticipate the future. Intrapreneurs are continually searching for new opportunities (Morris et al. 2010).

An intrapreneur needs to understand both the external environment in which the organization operates, and the internal environment. Launching a new product can be difficult in an organizational environment that follows a strict policy, that is, highly bureaucratized, or when the new project must pass through an approval processes (Hornsby et al. 2002). For this reason, it's crucial for the intrapreneur to know the organizational culture, the management structure, the behavior and motivations of his/her colleagues, among other internal variables, and therefore overcome the barriers of an excessively bureaucratized organization. Successful intrapreneurs are especially adept at navigating between the bureaucratic and political inertia of the organization (Ireland et al. 2006; Govindarajan and Desai 2013).

Intrapreneurs are highly committed in their company, sincere and highly consistent in their work and their interactions. Learning is also a key issue for them (Govindarajan and Desai 2013).

In addition to being sincere, the intrapreneur in general, shares merits and recognition with the rest of the personnel involved in the project. This allows him to build a coalition of trusted advisors and supporters within the organization (Morris et al. 2010) that will, in turn, help to persevere against obstacles and adversity (Quast 2011).

It also becomes necessary that intrapreneurs have negotiating skills because resources are always scarce in a company and he/she will have to convince others to invest in a certain project instead of allocating budget to R&D, advertising, design, etc. The intrapreneur must know how to negotiate the budget amount and probably compete internally for the allocation of resources to other projects within the organization (Miller 2014).

In coordinated companies, new ideas should be discussed with employees who may know different aspects of the problem to be solved in order to develop a better solution. Introducing an innovation in the market often requires knowledge and skills of employees from different departments, so the intrapreneur requires high levels of diplomacy and ability to stimulate and direct the work of multidisciplinary teams (Morris et al. 2010).

Intrapreneurs are often good communicators and have social abilities. An intrapreneur knows how to sell an idea (Hender 2003).

Visual thinking is another of the intrapreneur's characteristic abilities. That is, the ability to combine brainstorming, mind mapping and design thinking. Once they have an idea they do not stick with the first alternative they come up with to implement it. For intrapreneurs it is also challenging to find the best solution to a problem after a mental visualization process of different alternative solutions (Govindarajan and Desai 2013).

They do not make their ideas public immediately. They mature ideas and keep them secret until they are more developed, thus protecting them from potential opponents (Govindarajan and Desai 2013).

Another key psyche dimension of the intrapreneurs is risk-taking propensity. Risk-taking refers to "...the perceived possibility of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequence than the proposed situation" (Brockhaus 1980: 513). Unlike entrepreneurs who risk their money, intrapreneurs risk the resources of their organization and those of their shareholders, so they tend to take moderate and calculated risks (Morris and Trotter 1990).

The intrapreneur works under pressure of uncertainty, risk and time pressure (Barbosa et al. 2007). Intrapreneurs face these adverse circumstances, because they are characterized by high levels of self-efficacy. Self-efficacy is one of the main psychological variables in the analysis of entrepreneurial behavior, because of its predictive power over entrepreneurial intent (Zhao et al. 2005) and because it distinguishes between entrepreneurs and intrapreneurs from those who are not (Chen et al. 1998). Self-efficacy refers to individuals' perception of their capacity to perform certain tasks. Individuals with high levels of self-efficacy perform better the tasks they must, they are persistent even in adversity, and are better able to cope with situations of change (Bandura 1977).

3 The Intrapreneurial Behavior

The intrapreneurial behavior becomes relevant as it provides a new facet of leadership. While the traditional leader sits on the known, plays it safe, relies on past experience, needs detailed information to decide, tries to minimize risks, and asks the organization for the resources it needs; The leadership of the intrapreneur relies on the unknown, taking calculated risks, experimenting, harnessing the knowledge that is possessed, seeking the maximization of value and the optimization of available resources. Furthermore, the intrapreneurial leader makes decisions differently. They try to understand complexity rather than set out to simplify reality quickly. They make decisions with data enough, assume calculated risks and, if necessary, change directions when new information is available (Foley 2015).

Intrapreneurs are open, transparent and committed to driving the success of their organizations. Their behavior in the organization shows confidence, commitment and courage when facing adverse circumstances (Kuratko 1993; Stopford and Baden-Fuller 1994). Through their performance, they develop a new working environment in which other employees feel motivated by purpose and value rather than money (Morris et al. 2010; Govindarajan and Desai 2013).

They search for good ideas to develop in their companies, but also to start projects whose objective is that products, whether new or improvements of the existing ones, can better cover the needs of the customers. To this end, they sometimes cooperate with clients through co-creation processes (Hender 2003).

Furthermore, intrapreneurs are often confronted with resistance to change (Drucker 2010). They are highly engaged change agents (Govindarajan and Desai 2013) and contribute to building a flexible, adaptive and enterprising organizational culture (Foley 2015). Intrapreneurs handle uncertainty well and have the ability to work in unprogrammed and unpredictable environments (Hender 2003), while at the same time optimize organizational resources (Foley 2015). They make their ideas public when they are sure they are viable (Govindarajan and Desai 2013).

4 Organizational Practices That Encourage Intrapreneurship

Previous literature has identified several practices that an organization can use in order to encourage intrapreneurship: An adequate system of rewards; a good intrapreneurship support program; management support, especially from middle managers; freedom and independence to implement a new project; error tolerance; time to develop new ideas; transparency and open communication; and training programs.

Those organizations with an intrapreneurial oriented culture are more likely to attract and retain the most talented employees (Morris et al. 2010). Sometimes, the intrapreneur has to face strong values, beliefs and organizational practices that can be demotivating. However, it is possible to stimulate change in organizational culture in such a way that creates a context that favors intrapreneurship. This process, which can be complex and time-consuming, can be favored by management by introducing practices that stimulate the trust, respect, and appreciation of the efforts of intrapreneurs (Kuratko et al. 2014).

An intrapreneurship oriented policy increases the intrapreneur's satisfaction and contributes to increased his/her loyalty (Antoncic and Antoncic 2011) as well as social identity or sense of belonging and commitment to the organization (Ashforth and Mael 1989; Van Knippenberg and Van Shie 2000; Moriano et al. 2009). Intrapreneurs have high internal locus of control gives them self-confidence and makes them feel responsible for what they do (Morris et al. 2010).

Performance-based rewards encourage the intrapreneur to face new challenges and reinforce satisfaction with significant achievements (Sykes 1992; Barringer and Milkovich 1998; Kuratko et al. 2005). When the intrapreneur is aware of making a significant contribution to the organization while pursuing his/her own vision at work, there can be a great increase in job satisfaction, to build credibility, and strengthen self-confidence (Miller 2014).

About 70% of successful entrepreneurs got their business idea while working for a previous employer (Chamorro-Premuzic 2012). Nevertheless, many successful businesses have been created by people who had a promising idea while working in an organization where they did not have a good intrapreneurship support program or had none at all (Govindarajan and Desai 2013). Managers must benefit from the talent of all employees, stimulate their creativity and be aware that brilliant ideas and innovation can emerge anywhere in the organization (Coulombe 2016).

Management support is a key element as it must provide the intrapreneur with the means and resources necessary for the development and implementation of his/her ideas (Stevenson and Jarillo 1990; Kuratko et al. 1993, 2014). This support can be channeled through different practices such as providing necessary resources or expertise championing innovative ideas, or institutionalizing the entrepreneurial activity within the firm's system and processes (Hornsby et al. 2002). In particular, middle managers play a key role in creating an environment that encourages intrapreneurship (Wooldridge and Floyd 1990; Floyd and Woolridge 1992, 1994; Ginsberg and Hay 1994; Pearce et al. 1997; Hornsby et al. 2002; Kuratko 1993; Stopford and Baden-Fuller 1994).

The freedom to implement a new project in the organization and the recognition of his/her performance are two important motivating factors for the intrapreneur, even more than economic rewards (Govindarajan and Desai 2013). These variables, in their condition of motivating factors, also mean a difference between entrepreneurs and intrapreneurs. The intrapreneur does not assume the same economic risk as the entrepreneur, who can get a greater reward for the risk assumed with high profits when the business is successful. Although economic rewards motivate the intrapreneur (for example through a raise of salary, bonuses, etc.), however, they consider more important the recognition of their merits within their organization (for example becoming the center of attention in a meeting, having a meal with the CEO, mentioning their successful projects in internal circulars, among other forms of recognition) (Hisrich 1990; Miller 2014).

Independence for implementing a project becomes an important stimulus for both entrepreneurs and intrapreneurs. However, the intrapreneur is limited in his/her ability to act by the policies and procedures established by his/her organization. In this case, in order to avoid discouragement and frustration, a good intrapreneurship program would give as much freedom as possible to the intrapreneur, considering that the organization must also clearly establish limits in terms of budget, responsibility for decision making and scope or span of control (Miller 2014).

Error tolerance is also an important element (Zahra et al. 1999; Kuratko et al. 2014). Organizations will encourage intrapreneurship if they do not punish honest

failure, that is, the failure of those projects in which the intrapreneur has concentrated a great effort but have failed for reasons beyond his/her control (Nielsen et al. 1985).

Organizations should also allow time for intrapreneurs to take the time to look for new ideas, or to modify, if necessary, established procedures while they're working (Covin and Slevin 1991; Kuratko et al. 2014). This issue is an important factor in achieving the commitment and satisfaction of the intrapreneur, since the intrapreneur needs time to develop his ideas (Buekens 2014).

Transparency is another key aspect. The intrapreneur will feel free to propose an idea if the organizational environment recognizes the authorship of the idea at all stages of project development. Furthermore, it is essential to establish systems and procedures so that new ideas can be evaluated, selected and developed effectively (Kuratko et al. 1993; Ferrier 2015). These systems should be transparent so that intrepreneurs can clearly understand why their idea is accepted or not (Buekens 2014). Open communication is also an important element as a way of sharing information in quantity and quality and to promote learning, particularly for those organizations that want to enhance innovation (Zahra 1991).

Previous literature indicates that some of the characteristics of intrapreneurs can be stimulated through training programs (Kuratko and Hodgetts 2001). Since intrapreneurs often work with multidisciplinary teams, it is necessary that their training programs foster the necessary skills so that, on the one hand the intrapreneur can empower, motivate and get the commitment of the team members, and on the other one can improve how to manage their diversity and complexity. Furthermore, skills on using external environment forecasting tools are critical to anticipate trends and changes in the industry, especially in hostile environments. Training programs should be oriented towards the development of these skills (Zahra 1991).

In a company, there are many activities in which intrapreneurs can suggest and launch improvements. Following, there are five well known examples of successful intrapreneurship related to products:

- *3M—The Post-It Note*

  3M was a pioneer enhancing creativity within their employees by letting them develop new ideas and projects during 15% of their work time developing new projects. Among them, one of 3M's scientists developed a more user-friendly adhesive and 5 years later, another colleague at 3M, evidenced that the sticky solution could be very useful in daily life to solve different issues as bookmarks falling out of reading books. The sticky solution became the well-known Post-it Notes.
- *Facebook—'Likes'*

  Liking a post or photograph on Facebook is a familiar action, but this wasn't an idea generated by Mark Zuckerberg and co; it came from their celebrated 'hack-a-thons,' where coders and engineers are given a platform to create and develop ideas. It has been reaping the benefits ever since because the social network embraced a culture of intrapreneurship.

- *Google—Gmail*
  Google enhances intrapreneurship by offering their employees a 20% timeframe on developing personal projects related to the business. A project from one of the employees was the initial template for Gmail (particularly the search function and increased storage capacity). Today, Gmail remains one of the most widely-used email platforms on the web, driving key traffic to Google's products.
- *DreamWorks*
  The animation company believes in the creativity and ideation of their employees and reinforces them offering their employees free training on how to write scripts, learn how to pitch … If their ideas achieve the required level, employees can present them to the company's real executive team to be developed.
- *Sony—PlayStation*
  A Sony employee came up with the PlayStation when facing a personal issue. He tried to make his daughter's Nintendo console more powerful and user friendly, and to do so he developed the original Sony PlayStation.

Without the adequate environments oriented to intrapreneurship and innovation, all these ideas and many others would have never been successful.

5 Conclusions

The review of specialized literature has allowed us to identify the main characteristics of the intrapreneurs, their behaviour and the practices that can help the company to stimulate the commitment of its workers through entrepreneurial activities. The positive impact that intrapreneurship has on company performance, both in a short and a long term, turns intrapreneurial competences into a key capability those managers must be able to stimulate and protect through appropriate organizational policies. For this reason, the support of management, especially middle managers, is crucial for the development of a culture oriented to innovation and change, stimulating creativity in any part of the organization.

Intrapreneurs and entrepreneurs share many characteristics and both behaviours are clearly guided by the achievement of challenges. However, there is an important difference between them: intrapreneurs face the additional challenge of developing their ideas within the framework of the rules and culture of the organization for which they work. Therefore management must be aware that the organizational structure is a factor that will condition the success or failure of intrapreneurship initiatives.

Adopting an intrapreneurial culture is a great approach for the long term health of a company as intrapreneurs are demonstrating through their actions that ideas and innovation can come from anywhere within the company, they are transforming organizations to be more entrepreneurial and more relevant in a rapidly changing

world. Therefore, it becomes a clever decision to embrace intrapreneurship and set a vibrant intrapreneurial environment within the company giving freedom and time to the employees to be creative, more innovative, productive, and engaged. This way companies create a new type of working environment that retains talent and helps employees feel more fulfilled.

As individuals, intrapreneurs have a high level of self-autonomy, are highly motivated and viewed by others as a leader, not by what they say but what they do, they are defining a new face of leadership.

They are entrepreneurs within existing organizations, they have always been pioneers, builders and change agents driving innovations, so managers must tackle the challenge to identify, develop, motivate and retain them in the company.

In order to face the challenge, companies can implement varied good practices fostering intrapreneurship, all of them related to concepts as time, trust, motivation, communication, creativity, freedom and error tolerance.

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Can Women Entrepreneurs Plan to Prosper? Exploring the Role of Gender as a Moderator of the Planning-Performance Relationship

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Abstract Women entrepreneurs have long been argued to suffer from disadvantages in initial resource stock, which makes it difficult to establish and maintain a sustainable competitive advantage. Prior work suggests that planning may assist in overcoming these disparities; however, few studies have examined these relationships while considering context. We explore the role of strategic business planning activities on entrepreneurial firm performance and whether such planning activities yield greater benefit for women than men. We find that business planning provides greater performance benefits to women, which we argue may give women an opportunity to compensate for initial resource disadvantages.

Keywords Women entrepreneurship • Gender • Performance

1 Introduction

Entrepreneurship is inherently gendered, and scholars appear to increasingly appreciate gender explorations (Jennings and Brush 2013). These researchers are working to resolve the extant literature's relative lack of rigorous and meaningful insights into the gendered issues within entrepreneurship generally (Kalnins and Williams 2014) and the gender-performance relationship, specifically

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(Mitchelmore and Rowley 2013). In the United States, this is a particularly important issue, given that as of 2016, there were an estimated 11.3 million women-owned businesses operating in the U.S., with the number of women-owned businesses increasing 45% between 2007 and 2016 (American Express 2016). This figure is reportedly five times greater than the national average, while revenues of women-owned businesses increased 35% since 2007, a full 30% higher than the national average. Despite this positive trend, women-owned businesses are lower in relative economic impact and generally report operating smaller businesses than their male peers (American Express 2016), which suggests that some important differences persist between men and women-owned businesses in the United States.

Prior research considering gender and entrepreneurship, has confirmed that women generally have lower access to several forms of capital, particularly financial capital (Bosse and Taylor 2012; Jennings and Brush 2013). In light of the resource-based view of the firm (Barney 1991), this resource deficit at start-up may create pervasive and persistent difficulties for women in obtaining and/or maintaining a sustainable competitive advantage. Some research purports that planning assists in overcoming the capital deficit and boosting the performance of women-owned ventures (Lerner and Almor 2002), which aligns with the more general literature centering on this relationship.

Strategic planning is widely recognized as a critical factor for business success (Wang et al. 2007) and is generally believed to yield higher levels of firm performance for SMEs across a variety of measures, such as sales growth (Dibrell et al. 2014), return on assets (Dibrell et al. 2014), and profitability (Becherer and Helms 2009). However, a surprising number of entrepreneurs do not engage in strategic planning practices, such as business planning. Despite the well-documented importance of strategic planning for firm success, women are believed to engage in lower levels of strategic planning (Lerner and Almor 2002), potentially due to the belief that women hold goals that are broader and often noneconomic in nature (Jennings and Brush 2013). This makes better understanding the relationships among gender, planning, and performance all the more critical. Framed in the resource-based view of the firm, we attempt to overcome this prior limitation in the literature by analyzing the strategic planning-performance relationship of 234 firms through a gender moderator lens.

2 Literature Review

2.1 Resource Based View and Strategic Planning

While many business strategy researchers focus on corporate strategy, others have argued that strategic planning is even more critical for newer firms given their lack of resources and resulting inability to weather business cycle interruptions (Porter 1991). Research of growth-oriented firms has shown a link between strategic planning and organizational performance (Mazzarol et al. 2009). Business planning

provides the framework for developing the strategic capabilities necessary for high performance (Lerner and Almor 2002). The availability and use of resources within SMEs have been directly linked to the strategic talents and skills of the business owner (Runyan et al. 2006). Effective strategic planning can play a critical role in both existing firm growth and new venture creation (Wiklund and Shepherd 2003), and the quality of planning is often the direct result of business owners' experiences (Lumpkin et al. 2010).

West and Noel (2009) suggest that new venture planning includes knowledge about opportunities within the marketplace and the strategic approach necessary to take advantage of these opportunities. Some business owners focus more on internal strategic planning that emphasizes product efficiency and innovation, process refinement, and financial objectives (Gibson et al. 2011; Verheul et al. 2002). Conversely, other entrepreneurial businesses pursue more externally oriented strategic planning aimed more at sales growth, marketing, and customer service (Gibson et al. 2011; Kumar et al. 2001). Business owners must develop a keen understanding of their business environment and capabilities, and use this knowledge to adopt the most appropriate approach for strategic planning.

Business startups are filled with challenges and strategic planning can reduce associated uncertainties (Gelderen et al. 2000) and overcome the liability of newness (Aldrich 1999). Effective planning also shows that owners are dedicated to starting the business and will be persistent in their efforts to develop the venture (Liao and Gartner 2006). Specifically, Delmar and Shane (2003) found that planning had a positive effect on business development and progression through identified milestones, especially during the first 2 years of the business.

Generally, prior research has provided evidence that planning positively affects newer firm performance. Effective planning can help better organize resources, reduce uncertainty and provide realistic goals needed for business startup and growth. However, questions of timing remain. For instance, does strategic planning activities at start-up result in improved firm performance or do these activities benefit a firm more beyond start-up?

2.2 Women Business Owners and Strategic Planning

A U.S. federal government contracting program defines a business as a woman-owned business if it meets all requirements to be classified as a small business and has at least a 51% ownership position held by a woman. According to this definition, women currently own 38% of businesses in the US (American Express 2016). In addition, female business owners have been reported to earn an average income level that is 2.5 times the annual income and a net worth that was nearly six times that of women who do not own their own business (U.S. Small Business Administration, Office of Advocacy 2001).

While female owned businesses currently only constitute 38% of the businesses in the United States, they are a consistently growing small business owner

demographic, particularly with women of color (American Express 2016). There are many reasons for this increase, such as federal procurement procedures that provide preferential selection practices towards women owned firms (Reardon et al. 2007), changing personal goals of women in the workplace to desire more freedom (Shabbir and Gregorio 1996), a greater sense of security (Shabbir and Gregorio 1996), and the continuing perception of a glass ceiling in the corporate workplace (Gibson and Harris 2008).

Recent research has painted a very interesting and positive picture of the survival rates of women-owned businesses. However, women-owned businesses often have been found to underperform their male counterparts on a host of performance measures (e.g., Fairlie and Robb 2009; Robb 2002) and these disparages in performance have been linked to lower human capital for women entrepreneurs (Fairlie and Robb 2009). Despite the tremendous growth in numbers and comparative employment, the revenues generated by women-owned businesses has remained constant at 4% over the last 20 years (American Express 2016).

Recent findings that women owned businesses provide a lower risk of firm failure (Robinson 2007) and no closure disadvantage for women should create a favorable environment for access to capital. It remains, however, that these business owners are still less likely to receive financing and the financing amounts tend to be lower than their male counterparts. In addition, they must contend with lower levels of early startup capital (Carter and Rosa 1998), difficulty securing loans (Verheul et al. 2002), less credit history (Shaw et al. 2001), and historically less managerial and technical experience (Chaganti and Parasuraman 1996); thus, giving women a lower initial resource stock and competitive disadvantage compared to firms with greater resource endowments.

The efforts of strategic planning on the part of growth-oriented firm owners has been previously thoroughly covered, and the benefits of this planning can be paramount to business success (Mazzarol et al. 2009). However, the differences between women and men small business owners in regards to access to resources and the historical levels of managerial and technical experience can play a role in the success of these businesses (Fairlie and Robb 2009). It is because of these differences in access to resources and levels of experience that it is expected that women business owners who actively engage in business strategic planning will be more likely to see higher performance returns for their planning efforts than for men.

3 Methodology

3.1 Sample

Following the methods outlined by prior entrepreneurship researchers (e.g. Peake et al. 2015; Srivastava and BarNir 2016), undergraduate students served as a point of contact for the business owners participating in the study. Students received

instruction related to the nature of the research and were informed that the researchers would contact each respondent to ensure the survey had been completed by the individual. A total of 345 completed surveys, representing a founding owner or partner of the firm who remains active in decision making and day-to-day operations, were returned over the course of a year.

The data were filtered for the purposes of this study to ensure younger, employer firms were represented in the sample. For the sample, we have approximately 62% men, with 67% indicating Caucasian, non-Hispanic as their ethnicity, 10% indicating African American, and 10% indicating Caucasian, Hispanic as the ethnicity best describing them. Approximately 41% of respondents had a bachelor's degree. Respondents indicated that approximately 41% of firms were registered as sole proprietorships, 37% registered as LLCs, and the remaining 22% registered in some other form. Nearly one-third of respondents were engaged in service firms, 14% in retail firms, and approximately 2% in manufacturing firms.

3.2 Measures

3.2.1 Dependent Variable

Respondents were asked to report how they believe their organization's performance over the past year relates to its closest competitors in seven areas: sales, cash flow, return on investments, profit, quality of product/service, marketing activities, and customer service. Each area was represented by a 5-point Likert-type scale. Although these are self-reports of performance compared to competitors, this is often a way in which business owners are asked to report their performance (Droge et al. 2004). Self-reports of performance of this nature have been found to reflect actual objective performance for the firm (Droge et al. 2004). The performance items exhibited a Cronbach's alpha of 0.77, which is within the acceptable range.

3.2.2 Independent Variable

Planning activity outcomes during the start-up process were examined as the independent variable. Nine items, shown in Appendix, comprise the planning activities measure. Respondents were asked to rate the importance of each of these planning activities in starting their business on a 7-point Likert scale. These items represent a range of planning activity outcomes from writing a business plan to projecting financial statements to utilizing the services of professionals. The Cronbach's alpha for these nine items is 0.81, within the acceptable range for employment as a single item in our analyses. We averaged the nine planning activities for each respondent, yielding an average planning activity level.

3.2.3 Moderating Variable

Given the purported differences between men's and women's propensity for planning (Lerner and Almor 2002) and reported performance (Robb 2002; Robinson 2007), we examine the moderating effect of gender on the planning-performance relationship.

3.2.4 Control Variables

We include several control variables in our analyses in an attempt to isolate the effect of planning on reported performance, and believe the joint consideration of firm size, business age, level of family involvement, organizational structure, and industry provide context for each respondent. Additionally, since goals of the firm have been determined as an important component of planning activities (Peake and Watson 2014), we include a binary variable in the analysis to account for whether the respondent indicates the primary goal of the firm is profit and growth ($X = 1$) or some other goal ($X = 0$). Additionally, we control for reported level of effort expended in order to attempt to separate the effort expended and the types/arrangement of activities (planning independent variable) undertaken. In examining effort, we asked respondents to indicate how much effort they used to convince six types of stakeholders (lenders, family, government agencies, suppliers, customers, and community leaders) that their business was legitimate on a 7-point Likert scale. The effort across these six items was then averaged to create an average effort control.

4 Results

We examine any risk for common method bias via a Harman one-factor test. When the regression variables were entered into an exploratory factor analysis, 9 factors emerged with an eigenvalue greater than 1, with the first accounting for less than 15% of the total variance. Both the results of our multicollinearity (Fox 1997) and common method bias (Podsakoff et al. 2003) analyses suggest our data are not limited by these potential issues. See Table 1 for the means, standard deviations, and correlations of the variables employed in our analyses.

In alignment with prior literature, our first question seeks to understand if higher levels of planning activities will positively impact performance. Our analysis suggests that this relationship does exist ($\beta = 0.168$, $p < 0.01$). Although gender itself does not pose a direct effect on performance, gender does appear to play a moderating role in this relationship. Our findings show that in our sample, the interaction between gender (male) and level of planning exhibits a negative and significant impact on performance ($\beta = -0.155$, $p < 0.05$); thus, our results show that gender does impact the relationship between strategic planning and firm performance (Table 2).

Table 1 Correlations and descriptive statistics

	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10	11	12
1. Performance	3.65	0.64												
2. No. of employees	8.86	18.05	0.130*											
3. Business age	5.20	6.79	0.036	0.123*										
4. Family involvement	0.58	0.47	−0.055	0.019	0.060									
5. Sole prop.	0.41	0.49	0.114*	−0.150*	0.072	0.119*								
6. LLC	0.37	0.48	−0.052	0.130*	−0.189*	−0.083	−0.641*							
7. Retail	0.14	0.34	0.024	−0.109*	−0.016	0.005	0.044	0.032						
8. Manufacturing	0.02	0.13	−0.068	−0.025	−0.058	0.048	−0.044	0.036	−0.052					
9. Service	0.30	0.46	0.077	−0.098	0.009	−0.009	0.227*	−0.111*	−0.260*	−0.086				
10. Profit/growth goals	0.28	0.45	0.018	−0.043	0.009	−0.038	0.040	−0.018	0.114*	−0.082	−0.030			
11. Effort w/stakeholders	3.29	1.16	−0.030	0.198*	0.080	0.061	−0.051	−0.042	0.061	−0.028	−0.077	0.036		
12. Planning level	5.26	1.10	0.123*	0.147*	−0.016	0.153*	−0.134*	0.132*	0.069	−0.018	−0.050	0.095	0.207*	
13. Gender (male)	0.62	0.49	−0.108*	0.074	0.064	−0.079	−0.081	0.006	−0.050	0.034	−0.206*	0.088	0.108*	−0.060

N = 234

*$p < 0.05$

Table 2 Regression results

	Beta (Std. error)	Beta (Std. err.)
No. of employees	0.006* (0.002)	0.005* (0.002)
Business age	0.002 (0.006)	0.003 (0.006)
Family involvement	−0.132 (0.090)	−0.126 (0.089)
Sole prop.	0.184 (0.114)	0.187 (0.113)
LLC	0.000 (0.115)	0.017 (0.115)
Retail	0.065 (0.129)	0.036 (0.129)
Manufacturing	−0.204 (0.322)	−0.213 (0.320)
Service	0.067 (0.100)	0.064 (0.099)
Profit/growth goals	0.009 (0.094)	0.003 (0.093)
Effort w/stakeholders	−0.038 (0.037)	−0.042 (0.037)
Planning level	0.083* (0.040)	0.168** (0.058)
Gender (male)	−0.118 (0.089)	−0.113 (0.089)
Male × planning level	–	−0.155* (0.076)
R^2	0.080	0.097
$R^2\Delta$		0.017*

N = 234
*p < 0.05
**p < 0.01

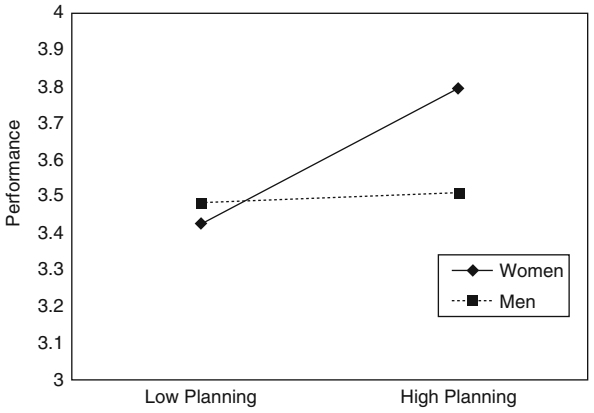

Fig. 1 Plot of gender and planning interaction

To more clearly examine this relationship, a plot of the interaction is available in Fig. 1. At low levels of planning, women report lower performance than men. As planning levels increase, men report relatively stable levels of performance. However, women appear to report greater benefits from the planning/performance relationship, since for higher levels of planning activity, women report greater levels of firm performance.

In addition, the size of the firm appears to hold a significant association with performance. To examine the robustness of the results of our analyses, we

constrained our sample to employer firms with 100 or fewer employees and then to 50 or fewer employees as the "small" firm threshold. Our results are robust to both specifications, with the planning and moderation effect exhibiting significance at the same levels.

5 Discussion and Implications

Our analyses demonstrate the existence of the planning-performance link within our sample of 234 SMEs, and suggest that women may experience greater performance benefits from planning than men do at comparable levels. Since we controlled for effort, firm goals, and several other important contextual factors in our analyses, our results suggest there are important performance effects attributed to planning, particularly for women-owned businesses. We believe these findings hold several important academic and practical implications.

5.1 Academic Implications

A review of our work suggests that women and men do not significantly differ in their direct effects for the planning-performance relationship. However, our indirect effects hold several implications for academics as we further probe this relationship. Post-hoc analyses via t-tests indicate that men and women did not report significant differences in either planning activity engagement ($t = 0.94$, *ns*) or performance levels ($t = 1.23$, *ns*). Although our direct effects were relatively uninteresting in revealing any gender differences, the indirect effects assist in theory-building related to gender and human capital. Researchers have long lamented the human capital resource gap between men and women entrepreneurs (Fairlie and Robb 2009), and lack of credit availability (Carter and Rosa 1998; Verheul et al. 2002), business experience (Chaganti and Parasuraman 1996), and women's more lifestyle-oriented business goals (Shabbir and Gregorio 1996) have been credited with lower levels of success for women owned firms. Our results suggest that when effort level and primary goal of the firm are controlled for, women may be able to fill this human, financial, and social capital resource gap with planning, and that their benefits to performance from higher levels of strategic planning may play a compensatory role in this process.

Although individual results vary over time, in the aggregate, it appears that both planning outcomes and processes yield benefits to entrepreneurial firm performance (Brinckmann et al. 2010; Mazzarol et al. 2009). Prior research has found strategic business planning to play a critical role both in spurring existing firm growth and in stimulating new venture creation (Wiklund and Shepherd 2003), as well as facilitating entrepreneurial intentions and firm performance (Liao and Gartner 2006). Our findings confirm the outcome-oriented planning results, and build on this

literature by exploring planning as a multi-faceted phenomenon. Research shows that experienced business owners create internal processes that promote more efficient business practices, which are focused on financial outcomes (Edelman et al. 2005). Lack of experience is frequently cited as a primary culprit of business failure (Ritholtz 2012); thus, our results are important as they confirm the long-held belief that planning improves the efficiency of the internal processes of the firm, and reduces the likelihood of failure through the establishment of a sustainable competitive advantage. We believe our multi-faceted planning dimension makes an important contribution to the further exploration of the planning-performance relationship, given its consideration to the psychological separation between start-up and current performance.

5.2 Practical Implications

This chapter suggests that greater involvement in a variety of planning activities yields higher levels of performance for firms within our sample. With the demonstrated importance of planning in our study, we believe the importance of small business development and innovation centers are highlighted. A better understanding of the strategies and techniques utilized by successful small business owners can contribute to both the research realm and the ability of policymakers and services providers to support this important constituency as an engine of economic growth. Our business planning measure is based on a number of activities targeted at different areas of the firm's operations. These activities both promote greater understanding of the firm and its processes and generate legitimacy with external stakeholders, which assists firms in overcoming liabilities of newness (Aldrich 1999). Researchers have acknowledged the importance of strategic business planning in overcoming the challenges and related uncertainties in starting and operating a small business (Gelderen et al. 2000). The results related to our planning measure promote particular activities at start-up that lead to improved firm performance. Both policymakers and practitioners can benefit from better understanding key planning drivers of enhanced small business performance.

Additionally, our results related to gender and planning hold important implications for various stakeholders. Targeted programs for women owned businesses have gained traction over time, and our analyses suggest that these may be well-placed. Women have been argued to hold resource disadvantages when compared to their male peers (Robb 2013). Our results indicate that planning is an important aspect for women owned businesses, and that planning programs targeted at human capital building for women may help them overcome financial and social barriers to small business entry. Small business development centers may be able to assist women-owned businesses via targeted planning workshops for nascent and new entrepreneurs.

6 Conclusions and Future Research

We believe this chapter will serve as a foundation for additional research in this area. Although we believe our planning variable to yield important insights, future research may benefit from determining whether specific planning activities matter more than others, or if activities targeted at one operational aspect yield more benefits than other areas. This may be particularly insightful in further probing the gender relationship discussed in this chapter. Aligned with future measure consideration, exploring individual levels of specific performance or widening the breadth of performance may be helpful in differentiating topline and bottom line impacts from planning.

Although the planning-performance relationship for entrepreneurs and their organizations has often come under debate, generally researchers have shown both planning outcomes and processes to serve as important elements of heightened firm performance (Brinckmann et al. 2010). The effects of gender on this relationship, however, are less clear, given women's resource constraints in business ownership. Women have often been argued to suffer disadvantages in starting human and financial capital; however, whether these initial disadvantages lead to long term performance differences is inconclusive.

Our findings suggest that our sample exhibits performance returns to planning, and that planning returns are greater for women than for men. Such results suggest that businesses reap benefits from planning, and that planning programs targeted at women may yield further benefit to the performance of women-owned businesses. We believe that this chapter raises additional research questions related to planning and performance over a broader sample of both surviving and failed business operations and across cultural contexts. Future studies can help develop a more complete understanding of the role strategic planning in firm performance.

Appendix: Items Used to Represent Planning Measure

Item	Planning activity
27b	Writing a business plan
27f	Projecting financial statements
27g	Obtaining all appropriate and necessary permits and inspections
27l	Gaining certification appropriate for my/our industry
27m	Conducting an industry analysis
28d	Obtaining a business license
28e	Setting up our business with the appropriate legal form
29a	Establishing the business as a legal entity
29k	Utilizing the services of professionals, such as an accountant, attorney, etc

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The Dark Side of Entrepreneurship in Coworking-Spaces

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Abstract Entrepreneurs act as an economic engine by creating new businesses and new jobs, intensifying competition and enhancing productivity through creative and novel methods of production and service delivery. Entrepreneurs are characterized as unique personalities with the ability to innovate, start firms, create value, profitability and growth. Coworking-spaces provide a creative and innovative atmosphere to entrepreneurs and working space to run their business operations while interacting and collaborating with other entrepreneurs. However, the professional and social dynamics in coworking-spaces bear the risk of stress, exploitation, conflicts and distrust, which negatively affect entrepreneurial self-efficacy and passion, undermining the advantages of coworking-spaces and leading to withdrawal of entrepreneurs. We argue that coworking-spaces can support entrepreneurs in facing these challenges by developing entrepreneurial communities, providing mentoring, coaching and social support to nascent entrepreneurs.

Keywords Entrepreneurial passion • Stress • Communities • Coworking-spaces

1 Introduction

Coworking-spaces (CWS) offer a novel concept for entrepreneurs (Cabral and Winden 2016; Moriset 2014) by creating a community, based on shared values of collaboration, openness, trust, accessibility, and sustainability (Capdevila 2014a; Fuzi 2015; Waters-Lynch et al. 2016). The social and professional spaces in CWS help entrepreneurs to interact, socialize (Bilandzic et al. 2013; Cabral and Winden 2016; Capdevila 2014b), build social ties for knowledge sharing, and to acquire information (Gerdenitsch et al. 2016). Coworking-spaces connect entrepreneurs from diverse backgrounds at one physical space (Spinuzzi 2012; Surman 2013) and provide a creative and innovative space to entrepreneurs, who can perform their

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business tasks in a professional office environment while collaborating and co-creating with others (Capdevila 2013; Spinuzzi 2012).

However, 'dark' personality traits of entrepreneurs (e.g. high need for control, distrust, and desire for attention) cause difficulties in social and professional interactions (Vries 1985, 2003). Entrepreneurs build relationships with powerful individuals to improve their own position and to use opportunistic strategies (Morck and Yeung 2003, 2004; Wright and Zahra 2011). Entrepreneurs continuously pursue their personal and professional goals, however failure in achieving the desired results cause stress, exhaustion and self-exploitation (McKenna 1996; Osborne 1991). Studies also suggest that entrepreneurs don't hesitate to exhibit scheming and exploitative behaviors to overcome competition (McKenna 1996; Vries 1985; Wright and Zahra 2011). Pohler (2012) highlights the exploitation of nascent entrepreneurs in CWS due to asymmetrical power relation between established and nascent entrepreneurs. Furthermore, the 'open for all' policy of CWS may provide the important impetus for creativity and innovation, but it also has several dark sides such as distrust and conflicts (Chowdhury 2005; Larson 1992; Wright and Zahra 2011).

This paper aims to conceptualize the effect of the dark side of entrepreneurship in CWS. First, we review the literature on CWS (Bouncken and Reuschl 2016; Gandini 2015; Spinuzzi 2012; Surman 2013), the dark side of entrepreneurship (McKenna 1996; Morck and Yeung 2004; Osborne 1991; Wright and Zahra 2011), and social capital theory (Kim and Aldrich 2005; Lin 1999; Obstfeld 2005; Wellman and Frank 2001). Next, we explain the impact of social isolation, stress, exploitative behavior, conflicts, and distrust on CWS. Building on this knowledge, we develop strategies for CWS to cope with the dark side of entrepreneurship through mentoring, coaching, community management, and strengthening the entrepreneurial spirit.

2 Theoretical Background

2.1 Entrepreneurship in Coworking-Spaces

Coworking-spaces provide an alternate work environment equipped with all office amenities and flexible pricing without special requirements or duties. This presents users an ideal space for social and professional interaction (Bouncken and Reuschl 2017; Uda et al. 2015). The salient features of CWS include provision of open-plan offices (Spinuzzi 2012), shared resources (Capdevila 2014b) and learning opportunities (Waters-Lynch et al. 2016). Coworking-spaces help to develop a community of independent professionals (Bouncken et al. 2016; Gandini 2015) including freelancers, entrepreneurs, small and micro enterprises from all industry sectors (Gerdenitsch et al. 2016; Spinuzzi 2012) to pursue social interaction, learning, cultural and business related interests (Bouncken and Reuschl 2016).

Boyd and Vozikis (1994) suggest that entrepreneurial self-efficacy increases through interaction and collaboration with likeminded entrepreneurs. Coworking-spaces provide opportunities for interaction and collaboration, boosting entrepreneurial self-efficacy (Cabral and Winden 2016). These spaces enable entrepreneurs to form groups or teams to work on creative and novel projects, which they could not complete on their own (Spinuzzi 2012). Creative and purposeful serendipitous environment provided by the CWS (Surman 2013) help entrepreneurs to share knowledge and to solve complex problems with minimum efforts in novel ways (Bouncken et al. 2016).

Coworking-spaces not only enable collaboration, knowledge sharing and learning among entrepreneurs but also provide opportunities to interact and develop social and professional networks (Capdevila 2014b; Choen 2011). Entrepreneurs can profit from this opportunity, breaking their isolation, and seizing new ideas (Capdevila 2013). Innovations flourish in CWS, as these spaces connect entrepreneurial spirit with the dynamic demands of the external environment (Moriset 2014; Uda et al. 2015). Workshops, conferences and seminars offered by CWS provide training and development opportunities for the entrepreneurs to acquire new knowledge and skills (Bouncken 2017; Fuzi 2015).

2.2 Social Capital Theory

Social capital theory provides a framework for understanding the relationship outcomes around the dark side of entrepreneurship. Social capital theory states that the analysis of relationships is based on economic and social dimensions (Lin 1999; Wellman and Frank 2001). Entrepreneurs engage in interaction and social networking for gaining support, acceptance and credibility (Lin 1999). They expect to save money by avoiding costly, time consuming errors, and unnecessary research (Obstfeld 2005; Wellman and Frank 2001). Studies suggest that entrepreneurs work together in more efficient and effective ways when they have strong social ties, mutual trust and shared values (Bolino et al. 2002; Kim and Aldrich 2005).

Social ties and networks help entrepreneurs to gain access to other entrepreneurial networks for knowledge sharing and acquisition of information (Aldrich and Wiedenmayer 1993). Interaction among entrepreneurs in networks leads to exchange of information, advice, resources, or services (Emerson 1976; Larson 1992). Entrepreneurs provide resources and information voluntarily and usually unsolicited, based on the mutual trust with implicit expectations of the return (Kim and Aldrich 2005). Entrepreneurs continuously try to reciprocate the favors and build equitable relationships. If profits from the interactions are high, then entrepreneurs remain satisfied and continue to contribute in their networks. If the profitability is lower than their expectation, entrepreneurs are likely to leave the network (Kim and Aldrich 2005).

Coworking-spaces provide the opportunities to entrepreneurs to build social capital and strong social ties through interaction based on their individual timing

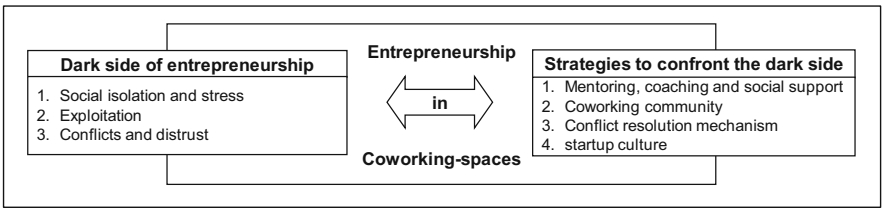

Fig. 1 Dark side of entrepreneurship and strategies to confront the dark side in coworking-spaces

and preferential space settings (Capdevila 2014a; Gerdenitsch et al. 2016). These spaces also help entrepreneurs to improve their profitability by working on mutual and joint projects. However, the social interaction and collaboration among entrepreneurs always bears the risk of opportunistic behaviors. In Fig. 1, we summarize the dark side of entrepreneurship and strategies to confront the dark side of entrepreneurship in CWS.

3 Dark Side of Entrepreneurship in Coworking-Spaces

3.1 Social Isolation and Stress

Entrepreneurs face difficulties in social and professional interactions due to their personality traits (Beaver and Jennings 2005; Osborne 1991; Vries 2003). Research conducted on a longitudinal dataset spanning 37 years depicts systematic antisocial tendencies (including rule breaking behavior) in entrepreneurs' biographies (Obschonka et al. 2013). While only a small number of studies address the dark side of entrepreneurs and entrepreneurship (McKenna 1996; Osborne 1991; Vries 2003), results show that entrepreneurs use their authority and wealth to monopolize their market position and undermine fair competition by exploiting social ties with political elites (Morck and Yeung 2003; Wright and Zahra 2011). Entrepreneurs' stamina and excessive commitment with their business can create tensions in relationships (family and friends) which often lead to social isolation (Wright and Zahra 2011). Entrepreneurs who operate their businesses from home face high level of social isolation (Ross and Ressia 2015). Social isolation causes anxiety, stress and depression in entrepreneurs (Baron et al. 2016; Ruef et al. 2003). Coworking-spaces offer a solution for social isolation to entrepreneurs, by providing opportunities to interact with other like-minded individuals (Bouncken and Reuschl 2016; Gandini 2015; Gerdenitsch et al. 2016). However, associating with other entrepreneurs or finding the right community or network is challenging. The findings of Ruef et al. (2003) show that minorities in their network or individuals with a low social status face social isolation.

Stress is the inability of an individual to exhibit an appropriate response in a threatening and demanding situation (Cohen and Wills 1985). Stress does not arise

due to a single stressful event. It arises, when individuals have to face accumulating problems without appropriate coping strategies (Cohen and Wills 1985). Entrepreneurs face high levels of stress during their exposure to an unpredictable and rapidly changing environment (Baron et al. 2016). In CWS, entrepreneurs have to balance their activities between collaborating with a defined social network and being open to diverse new contacts, between exploiting the chances for interaction and being distracted, and between their investments and value appropriation (Reuschl and Bouncken 2017).

Diversity vs. Community The 'open for all' policy of CWS creates a working environment for a diverse community based on a shared culture and working values. Entrepreneurs have to find a CWS with the appropriate community, culture, and values, and adapt to the changes induced through the exit of old members and the entrance of new members. The existing community is a major reason to joining a particular CWS (Fuzi 2015). Being part of the wrong community with a mismatching culture or inappropriate work values causes dissatisfaction and stress (Cohen 2016).

Interaction vs. Distraction Coworking-spaces design open office layouts to support and encourage casual interactions (Bouncken and Reuschl 2016; Capdevila 2014b). On the downside, this set-up causes noise through talks, phone calls, and meetings in the open space, leading to distractions. Such an environment can make it difficult for co-workers to focus on their work (Cohen 2016). While CWS are providing space and triggers for the open and joint discussion of creative ideas, entrepreneurs trying to get work done are interrupted, disturbed, and easily frustrated. As CWS purposefully try to foster interaction, it is very likely that one or more individuals use the space for socialization and networking and entrepreneurs have to bear the personality traits of other co-workers just like in traditional offices.

Cost vs. Benefits Entrepreneurs have to pay for accessing CWS. The price is usually lower compared to maintaining their own office space. In addition to fixed costs, entrepreneurs also pay a fee for accessing other facilities such as meeting room, events, etc. (Bouncken and Reuschl 2016; Waters-Lynch et al. 2016). Besides the monetary costs, entrepreneurs also have to invest time and energy into the creation of social networks. While CWS can provide a very helpful environment for new ventures and start-ups, nascent entrepreneurs without a customer base have to gain a position in the networks (Baron et al. 2016). Entrepreneurs have to invest continuously into their network positions while facing uncertain benefits and even the risk of being member of a community that cannot provide advantages anymore.

Spinuzzi (2012) defined working in a CWS as "combining social networking and working in a laid-back environment where the stress is gone" (p. 417). However, being unable to find the right community and bearing interruptions, distractions, annoying coworkers, and unhealthy competitions are causing stress for entrepreneurs in CWS. Hobfoll (1989) suggests that a high level of self-efficacy helps to cope with stressful situations. Most of the stressors in CWS that cause negative

emotions such as frustration, or dissatisfaction, are beyond the entrepreneurial control and reduce entrepreneurial self-efficacy.

3.2 Exploitation

Entrepreneurs engage in different social groups or networks for exchanging information (ideas or advices), resources (financial and non-financial), and getting support (acceptance or status) (Emerson 1976; Lin 1999). Strong social ties, mutual trust, shared values and common social norms help entrepreneurs to perform efficiently and effectively (Bolino et al. 2002). Therefore, entrepreneurs continuously try to establish and maintain their networks (Larson 1992). Coworking-spaces provide an innovative environment for nascent entrepreneurship, new ventures, and start-ups. However, entrepreneurs in CWS have to face relationship-based challenges like conflicts, distrust, or uneven returns that can ruin the whole idea of CWS.

Many nascent entrepreneurs aim to use the equipped offices, networking and business opportunities of CWS to establish their own business. Pohler (2012) highlights the risk of exploitation in CWS due to asymmetrical power relations between nascent and established entrepreneurs. Coworking-spaces provide the opportunities for collaboration and interaction that can lead to business deals. Established entrepreneurs subcontract some of their engagement to nascent entrepreneurs if their business opportunities surpass their production capacity (Spinuzzi 2012). Nascent entrepreneurs have to negotiate for a reasonable margin (Pohler 2012). During the start-up phase, nascent entrepreneurs often lack both resources and clients. They depend on projects from established entrepreneurs to make a profit. These projects come with closed deadlines, leaving no time to evaluate the advantageousness for their own business. Instead of developing their own business, entrepreneurs remain dependent on partners. The autonomous and flexible environment of CWS helps to overcome the barriers of limited resources and skills but exposes nascent entrepreneurs to the risk of exploitation.

3.3 Conflicts and Distrust

Mutual collaboration in CWS help entrepreneurs to utilize the knowledge and skills of each other. Lechler (2001) states that entrepreneurial teams tend to be more successful compared to single entrepreneurs. Entrepreneurs with diverse backgrounds, values, and goals join teams in CWS. Conflicts in entrepreneurial teams can be divided into cognitive and affective conflicts (Ensley et al. 2002). Cognitive conflicts are considered positive when they lead to effective strategic decision making. Affective conflicts are based on interpersonal disliking and personality based disagreement (Ensley et al. 2002). Cognitive conflicts lead to affective

conflicts, and conflicts can deteriorate decision making and even lead to departures of team members if not managed effectively (Collewaert 2012; Higashide and Birley 2002). Conflicts arising in entrepreneurial teams in CWS are likely to be affective conflicts. Task related conflicts are less likely to occur in entrepreneurial teams as they usually consist of members with a high specialization (Collewaert and Sapienza 2016). Entrepreneurial teams working on joint projects in CWS have low or only implicit hierarchies. Trying to take the project lead could lead to conflicts or even to entrepreneurs withdrawing from the group (Carmeli 2005).

Vries (2003) argues that the entrepreneurial 'need for control' leads to suspicious thinking based upon a permanent fear of being exploited. The collaboration of entrepreneurs in joint projects builds on common targets and values. These values include information sharing, mutual learning, cooperation and trust (Gerdenitsch et al. 2016; Letaifa and Rabeau 2013). Breaking the common values can lead to the early break-up of projects. Sensing distrust in the team climate results in decreasing team morale, dissatisfaction and poor productivity (McKenna 1996). Designed as 'open office spaces', CWS expose entrepreneurs to the risks of an external environment. Coworking-spaces try to compensate this disadvantage by offering limited private spaces like traditional offices. However, even when working in private offices, entrepreneurs share places like a kitchen or conference rooms, making it difficult to protect knowledge and secrets. Therefore, entrepreneurs hesitate to share their prospective plans with team members, causing insecurity and a sense of distrust. Entrepreneurs working in creative industries are especially at risk of imitation by competitors.

4 Confronting the 'Dark Side' of Entrepreneurship in CWS

4.1 Mentoring, Coaching, and Social Support

The desire to control, risk-taking proclivity, decision-making, leadership, creativity and several other characteristics are associated with the personality of entrepreneurs (Ricketts 2009). In the previous section, we explained how a variety of challenges and risks for entrepreneurship challenge the idea of coworking. The effective management of a CWS contributes to the creation of a positive community that helps to realize the potentials and to avoid the dark side of entrepreneurship.

First, CWS can provide training opportunities for their users by arranging workshops, events, seminars, etc. (Bouncken and Reuschl 2016). Trainings help to broaden the vision of entrepreneurs, to acquire new skills, and to create a positive community in their spaces. Training programs cater to the needs of wide variety of users. The CWS management could easily develop a special program to introduce nascent entrepreneurs into the community, and established entrepreneurs could take the role of mentors or coaches (Bouncken 2017). Gerdenitsch et al. (2016)

empirically show that the interactions and collaborations in CWS provide social support that helps to develop entrepreneurial self-efficacy. Moreover, interactions among entrepreneurs and social support directly helps to buffer negative effects of stress (De Clercq et al. 2016). It is possible to create a work environment in CWS that enhances mutual learning, cooperation, and collective growth instead of competition, animosity and hostility.

4.2 Coworking Community

Coworking-spaces have diverse range of users from students to micro enterprises (Bouncken and Reuschl 2016) with their independent motives, objectives and targets to pursue (Green 2014; Spinuzzi 2012; Uda 2013). Therefore, it is compulsory to communicate the norms and values of CWS with every stakeholder. Manager in CWS can play their role and communicate the expectations at the start of membership whereas, establish entrepreneurs can contribute by developing a climate based on trust, mutual respect and equitable relationships (Gerdenitsch et al. 2016).

Culture based on shared norms and values can only be created by developing a community in CWS (Butcher 2013; Rus and Orel 2015). Community of any CWS can be a major motivational factor for freelancers, start-ups, and entrepreneurs to join a CWS (Fuzi 2015). Coworking-spaces that fail to develop a community are less likely to communicate shared norms and values (Foertsch 2015). Establishing a community in a CWS is a two-dimensional process, where the users participate alongside the owners or managers who can employ community managers to take care of the community (Bilandzic et al. 2013). The owner or manager of a CWS has the chance to influence the development of the community by offering trainings, closely monitoring of community dynamics, and by collecting the feedback of new or leaving members.

4.3 Conflict Resolution Mechanisms

Coworking-spaces provide opportunities to create positive ties and networks between autonomous and independent members (Bilandzic et al. 2013). Differing opinions among individuals are a usual cause for conflicts in CWS (Chowdhury 2005). Lack of conflict resolution mechanisms lead to withdrawal of entrepreneurs from CWS and undermine the whole value system of CWS. Therefore, it is necessary to incorporate conflict resolution mechanisms at CWS level.

Entrepreneurial teams should also work side by side with the management of CWS for establishing conflict resolution mechanisms. Standard operating procedures and guidelines for members of CWS can be communicated by the management of a CWS at the beginning of membership. In the same way, entrepreneurs at

the beginning of any joint project can clarify the mutual duties and responsibilities to avoid task related conflicts (Higashide and Birley 2002). Forming committees of different members from the same CWS can also be a good strategy to resolve conflicts inside entrepreneurial teams.

4.4 Startup Culture

Coworking-spaces provide an ideal platform, where entrepreneurs can play a role model for young coworking users and support their intentions for establishing startups (Fuzi 2015). According to Foertsch (2015), startups in CWS are four times more likely to be successful compared to stand-alone start-ups. This can be possible, if the communities of likeminded people in CWS support ventures of nascent entrepreneurs (Rus and Orel 2015). A coworking-space and its inherent startup culture can help nascent entrepreneurs to cope with the dark side of entrepreneurship by creating a culture based on mutual respect, trust and collective growth. Coworking-spaces shall nurture start-ups by offering trainings, legal, financial and business guidance (Fuzi 2015; Surman 2013; Uda et al. 2015). These spaces can also play their role by connecting nascent entrepreneurs with other like-minded individuals who aim for establishing startups in CWS (Bouncken and Reuschl 2017; Rus and Orel 2015), helping them to strengthen their entrepreneurial passion and self-efficacy.

5 Conclusion

Coworking-spaces offer a high potential for promoting entrepreneurship. Entrepreneurs can easily develop social ties through interaction and networking opportunities provided by these spaces. Coworking-spaces also offer development opportunities by arranging trainings, seminars, conferences, or workshops. Entrepreneurship flourishes when CWS provide a climate for creativity, serendipity, and novelty. While there are many studies and articles discussing the chances and opportunities of CWS, the dark side of entrepreneurship in CWS has been ignored. We make a first step to fill this gap by pointing at the potential risks of and for entrepreneurship in CWS. The behavior of entrepreneurs can seriously affect the very basic values of CWS and entrepreneurship itself. The ‘open for all’ policy creates the strongest opportunities for CWS by increasing the diversity of available knowledge, extending the scope of networks and driving the development of a rich community. At the same time, this policy creates social dynamics that lead to an ever-changing community requiring continuous investments of entrepreneurs in their social position.

For entrepreneurs, it is challenging to identify a fitting community. Nascent entrepreneurs have to develop strategies to handle asymmetrical power relations

within entrepreneurial teams as their dependence on established entrepreneurs bears the risk of exploitation and entering unequitable relationships. We summarize the risks for nascent entrepreneurs as exploitation, the occurrence of conflicts, and the climate of distrust that decrease self-efficacy and entrepreneurial passion as the dark side of entrepreneurship.

Mentoring, coaching and community management in CWS provide the possibility to avoid the emergence of the depicted risks and challenges. Interaction and collaboration in CWS also lead to the evolution of social and professional ties, relationships, and networks. Building these relationships on equitable manners creates a serendipitous working environment in any CWS. Finally, communities based on shared values, mutual respect, and trust emerge from the social relationships and create a climate for entrepreneurial passion, self-efficacy, and start-up ventures.

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Gender Behavioral Issues and Entrepreneurship

Irene Comeig and Marc Lurbe

Abstract Women, despite the fact that they make up around 50% of the world's population, own and manage significantly fewer businesses than men worldwide. Previous empirical research indicates that the gender gap in entrepreneurial propensity mainly comes from subjective perceptions as self-confidence in one's own skills and fear of failure, and from women's lower exposure to other entrepreneurs. In this chapter we present laboratory economic experiments that study, under controlled conditions, subjective perceptions of women and men that seem to affect entrepreneurial propensity. The results of the reviewed experiments indicate that correcting factors such as self-confidence is possible (due to its cultural origin) and would reduce differences in entrepreneurial propensity between genders. Specifically, the promotion among women of competitive sports, the emphasis on feminine references in entrepreneurship, and avoiding presenting entrepreneurial information with male stereotyping while reinforcing women stereotyping are recommended ways to help women gain self-confidence in competitive environments, as entrepreneurship. Regarding the other subjective perception that has been found to sustain the gender gap in entrepreneurship propensity, the fear of losses (and/or attitudes towards risk), the reviewed experimental research, still in need of more context-free experiments, similarly suggests cultural changes and education as ways to overcome this gender-gap.

Keywords Education • Entrepreneurship • Experimental economics • Gender • Subjective perceptions

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1 Introduction

Women, despite the fact that they make up around 50% of the world's population, own and manage significantly fewer businesses than men worldwide (Kim 2007; Coleman and Robb 2012; Koellinger et al. 2013; Cho and Lee 2015)—As a matter of example, women-owned businesses in the US represented "only 3.5% of total sales, 6.4% of total employment, and 4.5% of annual payroll" in 2007 (Coleman and Robb 2012, p. 5). Although significant advances in the status of women entrepreneurs in the developing world during the last 30 years have been made (e.g. Center for Women's Business Research, 2009), there is still substantial scope for further research on the reasons that sustain this gender gap.

The recent empirical evidence on entrepreneurship using data from the Global Entrepreneurship Monitor (GEM) Project (considered the largest global research database in entrepreneurship—Reynolds et al. 2005; Sánchez-Escobedo et al. 2016), shows that subjective perceptual variables account for much of the difference in the entrepreneurial propensity between genders (e.g. Langowitz and Minniti 2007; Koellinger et al. 2011, 2013).

Specifically, Koellinger et al. (2013), using data on 17 countries, shows that the gender gap in entrepreneurial propensity mainly comes from subjective perceptions as self-confidence in one's own skills and fear of failure, and from women's lower exposure to other entrepreneurs, whereas socio-economic variables (as age, education, work status, and household income) only play a small role, probably due to their influence on perceptions. In the same line, Wagner (2007), using data from Regional Entrepreneurship Monitor (REM) Germany 2003 that include information not available from the GEM survey, finds that the fear of failure is important for the explanation of the gender gap in entrepreneurship.

In this chapter we present laboratory economic experiments that study, under controlled conditions, subjective perceptions of women and men that seem to affect entrepreneurial propensity. Laboratory economic experiments are particularly well suited to allow for analyzing subjective perceptions and its causality not only on women entrepreneurial behavior, but also on entrepreneurial behaviors in general. Due to the large quantity of research generated in recent years, this chapter does not attempt to provide a complete literature review, but to identify some underpinnings in the entrepreneurial propensity of women.

Our goal is to provide some insights into the foundations of the observed differences in entrepreneurship propensity across men and women by reviewing experimental research and to suggest ways to overcome this gender gap. The results of the reviewed experiments indicate that correcting factors such as self-confidence is possible (due to its cultural origin) and would reduce differences in entrepreneurial propensity between genders. Specifically, the promotion among women of competitive sports, the emphasis on feminine references in entrepreneurship, and avoiding presenting entrepreneurial information with male stereotyping while reinforcing women stereotyping are recommended ways to help women gain self-confidence in competitive environments as entrepreneurship.

The other subjective perception that has been found to sustain the gender gap in entrepreneurship propensity, the fear of losses (and/or attitudes towards risk), is reviewed in Sect. 3. The reviewed experimental research, still scarce in context-free experiments, suggests cultural changes and education as ways to overcome this gender-gap.

This chapter is organized as follows: Following this introduction, Sect. 2 provides an overview of the experimental research that shows the importance of self-confidence in the decision to entering competitive environments, and provides recommendations for policy interventions to increase women's self-confidence in competitive contexts. Section 3 focuses on experimental results on fear of failure through experiments on attitudes toward downside risk per gender. Section 4 concludes.

2 The Role of Self-Confidence

Recent research in the experimental economics literature, trying to provide insights into why we observe a higher fraction of men than women in top-level positions in business, science, or politics and a lower fraction of women in entrepreneurship found that generally men and women differ in propensities to engage in competitive activities (e.g., Gneezy et al. 2003; Gneezy and Rustichini 2004; Croson and Gneezy 2009; Niederle and Vesterlund 2007, 2011; Holm et al. 2013), with women shying away from competition more frequently. A stylized finding in this literature is that men opt to compete more often than women even where women are more able.

Self-confidence or, more precisely, the women's low self-confidence was found to be key for this result. Kamas and Preston (2012), for example, in an analysis with US undergraduate students found that, conditional on ability, self-confidence was the determinant condition in decisions to enter competitive environments, with women being less self-confident. In the same direction, the framed-field experiment on prediction markets presented in Boulu-Reshef et al. (2016) showed that the women's low self-confidence related to a lower trading participation.

Comeig et al. (2016), in an economic experiment with undergraduate students from economics and business careers in Spain, experimentally tested subjects' self-confidence and its relation to the decision of entering competitive environments. They found that women entered competitive environments if they had previous experience in competitive sports. Results showed that experience in competitive sports acts as a substitute for high self-confidence and that self-confidence serves as a path to enter in competitive systems. This result suggests that policy interventions devoted to increase women's experience in competitive sports might raise women's self-confidence and therefore help reduce the gender differences in top-level positions in business, science, or politics, and in the entrepreneurship propensity.

Actually, the research of Gneezy et al. (2009), showed that preferences for competition come from cultural influences (nurture), not from gender nature, and thereby might be changed with policy interventions. Gneezy et al. (2009), trying to understand the role culture plays in gender preferences for competition, analyzed

the competitiveness of the participants of two distinct societies: the Maasai, a patriarchal society in Tanzania, and the Khasi, a matrilineal and matrilocal society in India. Their results showed that, similar to the extant evidence from experiments in Western cultures, Maasai men opted to compete more than Maasai women. However, this result reversed among the Khasi, where women chose the competitive environment more often than Khasi men, and even weakly more often than Maasai men. Women outcompeted men in the matrilineal society.

In line with cultural pressure, Charness and Rustichini (2011) observed how men and women competitive vs. cooperative behavior changed when their same-gender peers observed them. In an experiment with university students from the US, females cooperated more often and men cooperated less frequently when they were observed by their same-gender peers. Charness and Rustichini (2011) concluded that men want to signal to other men that they are tough; whereas women prefer to signal to other women they are cooperative. This result indicates that cultural context (and salient group membership such as gender) influences gender behavior.

As entrepreneurship might be considered, in patriarchal societies, as a male typed career, this stereotype could act as a mechanism to explain gender differences in entrepreneurship propensity. Gupta et al. (2014) analyzed how the contextual influence of stereotype threat actually influences evaluations of new business opportunities. Evaluation of new opportunities has been reported to be an important part of entrepreneurship. They found that while salience of masculine stereotypical information boosted men's opportunity evaluation, when entrepreneurship was linked to feminine stereotypical information the results reversed in favor of women. Their findings suggest it is possible to reduce gender differences in entrepreneurship propensity by presenting appropriate gender stereotypical information. Given that the experiment was run with business students in Turkey and repeated with working professionals in the US, the results seem to hold cross-culturally. In the same direction, the survey analyzed by Leslie et al. (2015) about the gender imbalance in STEM careers and the women's underrepresentation in academia revealed that this imbalance is due to the fact that women are stereotyped as not possessing the necessary talent. They found that cultural stereotypes on expectations of brilliance are behind women's underrepresentation in some scientific disciplines and academic departments.

Overall, the findings reported in this section indicate that self-confidence in one's own skills (and cultural context, as self-confidence reinforcing mechanism) plays an important role in the willingness to enter in competitive environments as entrepreneurship. This result is important for policy interventions because appropriate education and presentation of information may correct women's lower confidence.

Results from controlled experiments suggest several paths to reinforce women's self-confidence: (1) Educating young women by giving them experience in competitive environments as competitive sports; (2) In order to alleviate patriarchal cultural pressure and its consequences on gendered entrepreneurial identity, highlighting feminine references in entrepreneurship; and (3) Avoiding presenting information with male stereotyping while reinforcing women labeling.

3 Gender Differences in Fear of Failure

Significant gender differences in fear of failure found in Koellinger et al. (2013) and Wagner (2007) might be due to more pronounced degrees of loss aversion in women, but they could also come from less favorable conditions in equity and/or credit markets for women when trying to get funding, or from less favorable *perceived* conditions.

Actually, some evidence from surveys in different countries show that female entrepreneurs face lower probability of receiving a loan (Cavalluzzo et al. 2002; Muravyev et al. 2009; Welsh et al. 2016), have a smaller amount of start-up capital (Coleman 2000; Verheul and Thurik 2001), and are more likely to receive a smaller loan (Zimmerman and Scot 2006). Other research from surveys, however, highlight the cultural gender bias (cultural attitudes favoring males) as the reason why female entrepreneurs tend to shy away from formal credit markets, even though credit markets are not actively discriminating against women (Zimmerman and Scot 2006; Ongena and Popov 2015).

In spite of the documented less favorable conditions that women face in credit markets, gender differences in fear of failure might come from women's more pronounced degrees of loss aversion, too. Recent economic experiments have identified some underpinnings that help study gender differences in degrees of loss aversion. Although laboratory economic experiments involving losses are difficult to conduct and, consequently, results may be puzzling, some experimental economics literature regarding attitudes towards risk per gender provides interesting insights.

Comeig et al. (2015) proposes two different risk structures (see Table 1) called downside risk and upside risk, respectively, being the downside risk structure an approach that allows the analysis of loss aversion in the laboratory. As referent dependant approaches (see Thaler 1980), and the Prospect Theory (Kahneman and Tversky 1979; Tversky and Kahneman 1992) show that outcomes are evaluated relative to some relevant reference point (in contrast to conventional economic approaches, as the Expected Utility Theory, in which the possible outcomes of available choice options are valued in absolute terms), downside risk structure may serve to elicit loss aversion. Specifically, Bediou et al. (2013) shows that the loss perception generated by payoffs under the reference point make subjects exhibit loss aversion.

The results of the laboratory economic experiment of Comeig et al. (2015) show that with downside risk (in presence of perceived losses) males tend to select the

Table 1 Examples of downside risk and upside risk

Option A	Option B
Extreme downside risk	
9 in 10 chances of 664	9 in 10 chances of 547
1 in 10 chances of 25	1 in 10 chances of 275
Extreme upside risk	
9 in 10 chances of 389	9 in 10 chances of 511
1 in 10 chances of 2500	1 in 10 chances of 600

riskier option more often than females in the low stakes scenario, but this significant difference disappears in the high stakes scenario. This result seems to point out to some degree of gender differences in fear of failure; despite the fact this difference is not widespread among situations of high stakes. This result lets the question open to more future research. It is important to highlight that the weak gender difference in perceived loss aversion found come from a context-free canonical form experiment, where cultural references and emotions might be minimized.

In contrast to the previous reviewed research, Comeig et al. (2014) presents a laboratory experiment in the context of credit markets. In this experiment subjects (half women) face a downside risk in the context of a choice between two loan contracts differing in interest rate and collateral requirements. The two contracts have been designed as theoretical incentive-compatible contracts, where the theory predicts that subjects with low risk projects should choose higher collateral at a lower interest rate, while subjects with high risk projects should select contracts without collateral at a higher rate. The key idea is that the cost of choosing collateral is lower for subjects with low risk projects as they have a lower failure probability.

However, if women exhibit more pronounced degrees of loss aversion the self-selection mechanism with collateral will fail. Results from this experiment show that incentive-compatible contracts with collateral fail to classify women, while they successfully classify men. Thus, in this downside risk environment in a context of financing decisions women show a significant higher degree of loss aversion. It is important to highlight that this experiment was conducted in three different European countries (UK, Spain, and Switzerland) showing the same experimental results in each of the three countries.

Table 2 presents an abstract of the results found in literature about gender differences in fear of failure (downside risk). As shown in the Table 2, contextual downside risks lead to more pronounced degrees of loss aversion in women.

Despite gender differences in generally defined risk preferences have seemed prevalent in literature surveys (see Eckel and Grossman 2008; Harrison and Rutström 2008; Croson and Gneezy 2009; Charness and Gneezy 2012; Charness et al. 2013), haven't found to be uniform across measurement methods and contexts (see Holt and Laury 2014; Filippin and Crosetto 2016). For example, Booth and Nolen (2012) report that girls in single-sex schools choose the risky option more often than girls in coeducational schools. In the same line, Nelson (2016) reevaluates empirical work on gender and risk, and concludes that gender differences in risk preferences are overstated in the literature. Probably, separating downside and upside risks, as presented in Table 2, will help clarify the results. The downside risk structure approaches loss aversion elicitation.

Supporting the idea that gender differences in fear of failure (Koellinger et al. 2013; Wagner 2007) might come from more pronounced degrees of loss aversion in women, and also from less favorable conditions (or perceived conditions) in cultural environment, economic experiments on downside risk structures seem to show stronger gender differences when contextualizing experiments.

In order to analyze social and economic factors behind gender behavior towards risk, Gong and Yang (2012) conducted experiments with subjects from two ethnic groups, the matrilineal Mosuo and the patriarchal Yi in China. However, the two

Table 2 Gender differences in fear of failure (downside risk) in the literature

			Gender differences	
Study	Type *(laboratory experiment or field study)*	Context *(contextual—specific or context-free)*	Upside risk *(low probability of a high payoff)*	Downside risk *(low probability of a low payoff)*
Comeig et al. (2015)	Laboratory experiment	Context-free (lottery choices) for low and high stakes.	No gender differences	Women weakly more risk averse
Comeig et al. (2014)	Laboratory experiment	Loan choices	N/A	Women more risk averse
Leslie et al. (2015)	Field study	PhD choices	N/A	Women more risk averse
Harrison and Mason (2007)	Field study	Venture capital market (business angel market)	No gender differences	N/A
Fehr-Duda et al. (2006)	Laboratory experiment	Context-free (framed as gambles) and Contextual (framed as insurance and investment decisions)	No gender differences	Women more risk averse
Bliss and Potter (2002)	Field study	Mutual funds management	No gender differences. If any, men more risk averse.	N/A
Holt and Laury (2002)	Laboratory experiment	Context-free: Lottery choices under real and hypothetical scenarios for low payoffs and high payoffs.	No gender differences when payoffs are scaled up (high payoffs) under real scenarios.	No gender differences

risk tests they used to measure risk attitudes per gender represent lotteries of 50% probability of success, thus not allowing for downside risk or upside risks analyses. They find that Mosuo people (matrilineal society) have a significant smaller gender gap in risk preferences. This is consistent with Cárdenas et al. (2012) that compare gender risk attitudes in Colombia and Sweden. They find that girls in Sweden show a small gender gap, while in both Colombia and Sweden girls are more risk averse than boys.

Gneezy et al. (2009) run the same investment risk test used in Gong and Yang (2012) (that does not allow for downside risk analyses) and found no significant gender differences. However, they found a significant ethnicity difference, being the matrilineal Khasi less risk averse.

Overall, the findings reported in this section seem to indicate that cultural context plays a role in the gender differences in fear of failure, which affect

entrepreneurship. This result lets some room for policy interventions through appropriate education.

However, results from preliminary context-free controlled experiments still show some gender differences in fear of failure (through downside risk) that require further research in order to understand if such differences in fear of failure originate from nature too, and not only from nurture (cultural factors).

4 Conclusion

Significant advances in the status and number of women entrepreneurs in the developing world have been made during the last 30 years. However, women still own and manage significantly fewer enterprises than men worldwide.

This chapter has presented laboratory economic experiments analyzing, under controlled conditions, subjective perceptions of men and women that seem to affect entrepreneurial propensity. Laboratory economic experiments are exceptionally well suited to allow for examining subjective perceptions. The goal of this review was to identify some underpinnings by providing insights into the foundations of the observed differences in subjective perceptions as self-confidence in one's own skills and fear of failure.

The results of the reviewed experiments suggest that correcting factors such as self-confidence implies helping change culture. Specifically, the promotion among women of competitive sports, highlighting feminine references in entrepreneurship, and avoiding male stereotyped entrepreneurial information while presenting women labeled information are recommended ways to increase women self-confidence in competitive environments as entrepreneurship.

The significant gender differences in fear of failure that seem to push the gender gap in entrepreneurial propensity have been revised too. Despite the fact that results from preliminary context-free economic laboratory experiments show some gender differences in downside risk structures, findings reported in experiments seem to indicate that cultural context plays an important role.

This result lets the door open to policy interventions providing appropriate education and a fair playground for all genders in entrepreneurship matters.

However, more experimental research in downside context-free environments is needed to better understand if gender differences in fear of failure originate in nature too, and not only in cultural factors (nurture).

Another question that remains open is how increasing women's exposure to other entrepreneurs, or to women entrepreneurs, may help reduce the gender gap in entrepreneurship propensity.

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Part III
Entrepreneurial Leadership

Systems Approach to Entrepreneurial Success: The Theoretical Discussion on the Significance of Family Factors for Effective Entrepreneurship

Marcin W. Staniewski and Katarzyna Awruk

Abstract Successful business activity (equated with entrepreneurial success or business effectiveness for the purposes of this paper) has become a 'popular' research area in the recent years, which makes the researchers increasingly willing to explore the issue in a more and more sophisticated manner. Simultaneously, the interdisciplinary approach, which consists in seeking the psychological factor in the broadly understood entrepreneurial behaviours, is becoming particularly alluring. A good example of this is the ongoing expansion of the definitional scope of entrepreneurial success intended to add 'subjectivism' to the term. In other words, entrepreneurial success gradually ceases to be operationalized solely with 'objective categories', such as the period of a company's operation, profitability, number of employees, etc., and becomes enriched with the 'subjective element', such as the level of satisfaction from fulfilment of the objectives that an entrepreneur pursues, level of business competitiveness or, for instance, the general level of satisfaction from running ones own business. Another example of this (by the way) new trend is seeking psychological determinants of entrepreneurial success, which directs some attention to personality variables. In this respect, the significance of, among other things, traits has been demonstrated; that is, the high level of autonomy, extroversion, the sense of self-efficacy, locus of control, and openness to experiences or the low level of neuroticism. The relevant literature, however, shows little interest in the family aspect. Thus one may safely assume that the role of family factors (such as attachment styles, parental attitudes) in entrepreneurial success is highly underdefined in the literature (if not outright marginalised/neglected). Just a few papers discuss (1) the influence of the presence of a successful entrepreneur in the family on displaying business behaviours; (2) the significance of the lack of the

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male model in the family, and (3) the implications of an authoritative parenting style for business activity. However, two issues are worth noting: (1) these papers are mainly concerned with analysis of family variables as regards undertaking entrepreneurial activity and not successful business activity. What is more, (2) they do not discuss the systems approach to entrepreneurial success understood as the interaction between parental attitudes displayed by an entrepreneur's mother and father separately. Taking all this into account, the main objective of this paper has been set to be theoretical deliberation about the significance of exploration of the systems approach to successful business activity for future research.

Keywords Entrepreneurial success • Family • Entrepreneurial behaviours

1 Introduction

The term *development transgression* seems (to the authors' of this chapter) to most accurately describe what is happening in the empirical sphere of entrepreneurial success. We are witnessing a slow *breakdown* of a *brassbound* approach to research issues, which is concerned with just a single discipline; while *explorational interdisciplinary accents* are simultaneously sprouting in the literature. This process has had several implications: seeking the psychological factor in definitions of entrepreneurship (Staniewski 2016) as well as accentuation of the economic and non-economic significance of successful entrepreneurship (Al-Mahrouq 2010; Drucker 1999, p. 58; Janasz 2004; Kuratko 2003; Rogerson 2004; Wennekers and Thurik 1999), development of propositions of entrepreneurial success models (e.g. Giessen-Amsterdam model, a model of entrepreneurial success in the developing countries or a model of success in three stages of business development) (Żaliński and Łaguna 2014), accentuation of the electric approach to entrepreneurial success (Staniewski 2016) by way of broadening the definitional scope of entrepreneurial success with an individual's subjective dimension and thus taking into account such indicators as: the general level of satisfaction with running a business, fulfilment of the objectives set up prior to establishing a company (Indarti and Langenberg 2004; Walker and Brown 2004), degree of satisfaction with company's development or the number of clients serviced, attainment of goals regarding business development, and degree of satisfaction with tasks performed by employees or company's competitiveness (Staniewski and Awruk in press). This opens the door to further theoreticians' disputes on the significance and boundaries of subjectivism in self-reporting methods. In other words, should the psychological indicator such as the level of satisfaction with oneself as an entrepreneur be considered subjective in questionnaire-based methods or does the seemingly objective indicator (e.g., financial liquidity, profitability) lose its dose of objectivism in favour of subjectivism when a highly subjective method is adopted (since a questionnaire or survey certainly is one)? Or perhaps the indicator that appears to be subjective and has been generated by the theoretician's/researcher's mind should

not be considered subjective but only the ones that are enumerated by researchers? Is it possible that the indicators offered by the researchers: firm performance, workplace relationships, personal fulfilment, community impact, and personal financial rewards (Wach et al. 2016), some of which seem to be ostensibly objective (firm performance), are in fact entirely subjective? We leave this question open hoping that it might pave the way for researchers' deliberations about the extent of the subjective quality in the objective indicators of entrepreneurial success (especially when questionnaire-based methods are applied).

Another area for consideration regarding successful entrepreneurship is obtaining empirical confirmation for the factors that have been found to potentially determine entrepreneurial success. Accepting the *artificial* and at the same time agreed upon boundary dividing factors into psychological and non-psychological ones, whose sole purpose is to obtain "better" insight, we cite a fraction of those whose contribution to accounting for variance of entrepreneurial success has been discussed in the relevant literature. The first group is fed by such factors as government support programs (Rose et al. 2006), government policies (Hansen et al. 2009), formal business plans (Schilit 1986), age, education (Cragg and King 1988), technical knowledge (Huck and McEwen 1991), human resources, organizational capital (Rodríguez-Gutiérrez et al. 2015), and work experience (Evans and Leighton 1989; Pfeiffer and Reize 2000), etc. Certainly, the array of possibilities is wider, however the consideration and discussion of the systems-integrating approach to entrepreneurial success (which is adopted in this chapter) emphasizes the necessity to take a closer look at the second group of success predictors. The psychological factors conditioning entrepreneurial success include *personality dispositions* (extraversion, conscientiousness, openness, agreeableness, and low neuroticism) (Engle et al. 1997), inner sense of control (Timmons et al. 1985), need for achievement (McClelland 1961), self-efficacy (Zhao et al. 2005), self-confidence (Zhang et al. 2009); *cognitive factors* [alertness to market opportunities (Kirzner 1973), strategic planning (Reavley and Lituchy 2008), managerial skills (Lin 1998)]; and *social factors* [support from others (financial, technological, strategic partnerships, industrial contacts) (Carrier et al. 2004), community-based networks (Levent et al. 2003), and good relationships with customers (Ghosh and Kwan 1996)]. This holistic approach to psychological determinants, however, seems to overlook the significance of family factors by way of making their role in explaining entrepreneurial success marginalised. Such an observation is fairly surprising since the family system is one of the most important subsystems in which a human being grows and develops. The power of the family of origin is so overwhelming that it appears to be determining numerous areas of a person's life, including the scope of social roles that family members take as well as the direction of one's education, type of career path or an array of activities one becomes involved in, and a person's traits that frequently determine the level of one's everyday functional adaptability (Alesina and Giuliano 2010; Whiston and Keller 2004). Psychologists consider career and family life as the main components of the structure of an individual's life, which require their involvement and simultaneously shape their life path (Lachowska 2012; Trempała 2000). Therefore, if

career and family life affect each other and even have a similar *influence* on a person (and their social, cognitive, intellectual functioning, and identity shaping, etc.), it seems justified to ask to what extent is the family system capable of imprinting potential on a human being, which will translate into their effectiveness in terms of performing the role of an entrepreneur in adult life. Intrigued by the above issue, we have established the objective of this chapter to be deliberation on the legitimacy of exploring the significance of family factors for entrepreneurial success.

2 Family Factors and Entrepreneurial Success: Research Review

It is a tradition in psychology to define family system as "[. . .] a complex structure composed of mutually interdependent groups of people who share the same history, some level of emotional attachment, and introduce interaction strategies which individual family members as well as the group as a whole need" (Plopa 2015, p. 15). Thus the family system is a structure of subsystems with clear (or blurred) boundaries, with specified roles and functions, and established strategies and rules. These qualities may refer to both the family of origin (i.e. the system where a person grows and socialises) and one's own family as well (i.e. the system one establishes in adult life by way of entering into a relationship with a partner/marriage and possibly taking the role of a parent).

It may thus be assumed that a family (both one's own and of one's origin) exerts an enormous influence over the way an individual functions outside the family (in terms of adaptability/disadaptability). If so, such an influence may be considered from two theoretical perspectives: facilitation ("[. . .] the extent to which functioning in one sphere of life (e.g., professional work) becomes easier owing to the experiences, skills, and benefits acquired or developed though participation in another sphere of life (e.g. family life)") (Lachowska 2012, p.12) or conflict. So the question is whether performing roles in one's own family system facilitates the performance of roles concerned with running one's own business. Or is it the other way round that one's own family system hinders the achievement of entrepreneurial success? And what about the family of origin? Is the family in which we grow up capable of *imprinting* us with the potential/resources that might be decisive in our future fate as an entrepreneur? Since the relevant literature currently provides no empirically verified answers in this respect, we may only theorize referring by analogy to the findings of research on the relationships combining the family sphere with the professional one. Many papers elaborate on these relationships (Liang et al. 2013; Poon et al. 2012) and numerous models have been introduced too [such as, among others, the model of conflict between work and family by Frone et al. (1992), the dual-process model of work-home interference by Bakker and Geurts (2004), and the model of diversified and comparable significance of requirements

and resources for conflict and facilitation between work and family by Voydanoff (2004, 2005a, b)]. Combination of these data allows to draw several conclusions regrading the relationships between the professional and the family sphere. Both of the spheres (i.e. career and family) are interrelated; hence if we refer to, for instance, the model of conflict, playing the professional role may have a negative influence over performance of family roles and playing the family roles may hamper performance of professional roles. Following the dual-process model of work-home interference, one may come to a conclusion that the features of one's job (i.e. *requirements*, e.g., pressure brought about by a fast pace of work, tight deadlines, and *resources*, e.g., remuneration, atmosphere in the team, autonomy, getting feedback) cause the emergence of two psychological processes that translate into the way an individual functions in the family. The first process concerned with *requirements* may generally lead to constant overload, exhaustion, and health problems, which is closely related to a negative impact on the family. The second process related to *resources* as a motivational potential generates good functioning of an individual, which is connected with the flow and a positive impact of work on the family. Voydanoff, who adopts the perspective of the theory of systems after Bronfenbrenner (1986), assumes that work and family are two microsystems with numerous links and processes occurring between them. Conflict and facilitation are the mechanisms of the processes of mutual relations between work and family. Both the mechanisms work two-way, which is why, it is possible to talk about the following relations: work-family conflict, family-work conflict, work-family facilitation, and family-work facilitation, where conflict is relatively more frequently related to *requirements* and facilitation to *resources*. The requirements are divided into: *time-based* (e.g. time devoted to work, overtime, time devoted to child care, time devoted to housework), *pressure-related* (e.g. pressure related to time, losing a job, burdens arising from a relationship with a spouse or with children and running a home) and *requirements connected with the boundary between work and family* (e.g. working from home). Resources in this model are divided into: *resources generating resources* (e.g., social support from the superior, co-workers, partner, skills acquired due to activity in a given area), *resources in the form of psychological rewards* (such as the sense of being respected, taking pride in doing one's job or performing the role of a parent) and *resources related to the work-family boundary* (e.g., flexible working hours, maternity leave, support from the superior in terms of reconciliation between work and family life).

If the above dichotomisation of factors (into resources and challenges) is adopted to the relationship parent-child, a new perspective on the issue becomes available. Such a perspective may be referred to as a systems-integrating approach to entrepreneurial success which is manifested in an attempt to precisely define the degree of influence of the configuration of parental attitudes over the level of business effectiveness. Precisely, the intention is not only to answer the question on the predictive value of individual family factors (with regard to each parental attitude separately) but to determine what is the role of the configuration of parental attitudes declared by both parents at the same time. As a result of juggling with the concept of six dimensions of the relationship parent-child (see Table 1), two

Table 1 Plopa's concept of parental attitudes (2008)

Parental attitude	Description
Acceptance/ rejection	The parent is considered to be unconditionally accepting, creating the atmosphere of free exchange of feelings, trust towards the world and people, safety, giving the sense of support; they are open to various forms of support, however, without imposing themselves. The dimension of rejection is concerned with the parent evaluated as cold, distant, showing no understanding for the child's needs, maintaining relationships which are rather instrumental (consisting in maintaining the child) rather than focused on a person
Autonomy	The parent understands the child's need for autonomy and allows them to single-handedly explore the world (e.g., by solving problems, learning from mistakes, decision-making).
Inconsistency	The parent is considered erratic, moody, irritable, inconsistent, which makes them unable to build a calm, friendly atmosphere in the family
Excessive protection	The parent is evaluated as excessively intervening in a child's life, interested in each, even the smallest, manifestation of a child's activity; a parent displaying inadequate concern over the child, which often causes the relationship between them and the child to deteriorate.
Excessive demands	The parent is considered to demand unconditional obedience, limit the child's autonomy through numerous bans, orders, and punishments. The parent is described as strict with a punitive attitude, having a vision of the child's future, and rigidly demanding its imposition.

constellations of parental attitudes emerge—separately for the mother and the father. Integration of the two constellations of attitudes (of the mother and the father simultaneously) is important as, on the one hand, it may constitute an innovative attempt at accounting for the fraction of the multiplicity of causes of entrepreneurial success and, on the other hand, supply data on the buffering influence of these constellations over business effectiveness. In other words, referring to the mechanisms of facilitation and conflict, another perspective on seeking such configurations of attitudes emerges, which not only determine but even facilitate the achievement of entrepreneurial success in adult life (Fig. 1). However, to what extent can we talk about direct influence of family factors on entrepreneurial success? Is it that excessive concentration on the extension of the analysis of the significance of the configurations of family variables will cost us marginalization of the significance of the second category of variables? The behaviouristic concept of stimulus-reaction was enriched by the cognitive element of interpretation long ago. In this case, the formula becomes: stimulus-interpretation-reaction. Using this formula in the deliberations on entrepreneurial success; are we entitled to talk about any direct effect on a variable which is so immensely complex in terms of its conditioning? Or would it be useful to extend the *model* with seeking indirect effects?

Our "*formula*" then becomes: interaction between the configurations of parental attitudes declared by both parents partially interacts with cognitive factors (i.e., an individual's beliefs such as the sense of entrepreneurial self-efficacy), which remains interrelated with the other mediating variable—the behavioural factor

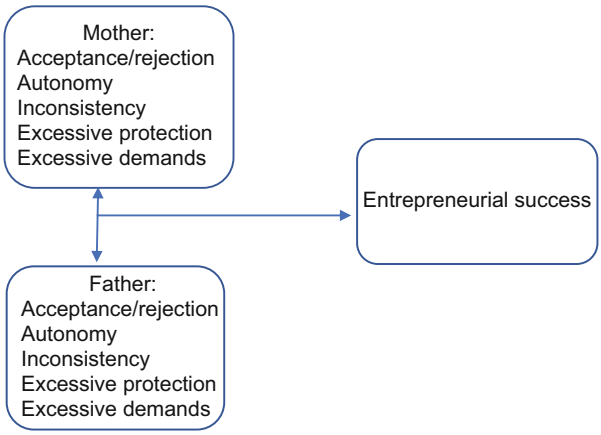

Fig. 1 Integration of the configurations of parental attitudes influencing entrepreneurial success

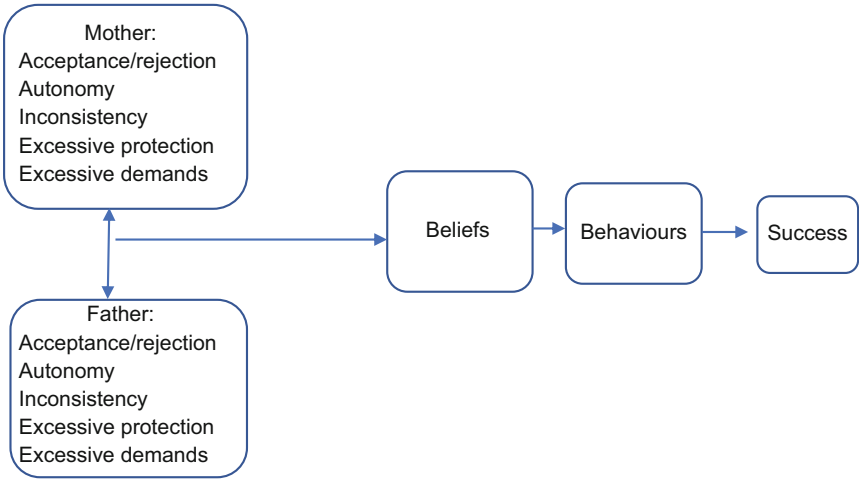

Fig. 2 Integration of configurations of parental attitudes influencing entrepreneurial success with the mediating role of the cognitive and behavioural factor

(i.e. the business activities that an individual becomes involved in). The final link in this chain of relationships is the relation of the behavioural factor with the achieved entrepreneurial success (see Fig. 2). At the stage of such initial theoretical-hypothetical considerations, this model could be later supplemented by the moderating variable—gender. Thus the final question that we would like to ask in this chapter is concerned with the moderating role of gender in a model assuming an intermediary relation between the interaction within the configuration of family factors and entrepreneurial success with the mediating role of cognitive and

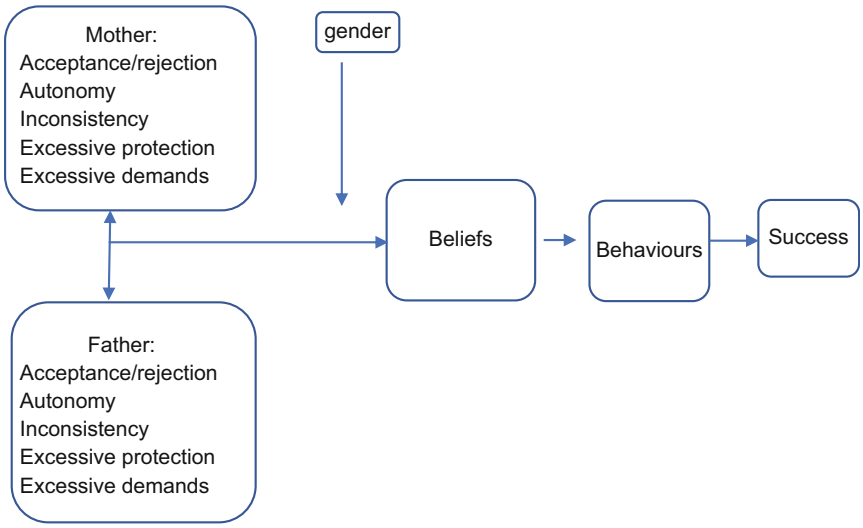

Fig. 3 Integration of configurations of parental attitudes influencing entrepreneurial success with the mediating role of the cognitive and behavioural factor and the moderating role of gender

behavioural factors (see Fig. 3). These questions might be intriguing in research terms but they remain within the sphere of theory, awaiting empirical verification.

3 Discussion

This paper undertakes to theoretically consider the significance of exploration of family factors for entrepreneurial success. Our chief objective was to shed light on a research area that has so far been highly underdefined or even marginalized in the relevant literature. The studies carried out so far were essentially focused on analysis of the role of a successful entrepreneur in the family, that is, on the mechanism of modelling entrepreneurial behaviours (Bosma et al. 2000; Katre and Salipante 2012; Littunen 2001; Reuber and Fischer 1997). It is worth noting, however, that these papers are mostly concerned with business activity rather than entrepreneurial success strictly speaking and their main aim is to answer the question whether the presence of a successful entrepreneur in the family may shape the entrepreneurial behaviours of the other family members?

Other studies of this type concentrate on the significance of the presence of the male role model for undertaking business activity (Kets de Vries 1996), and their main objective is to verify the influence of the absence (including emotional one) of the father on undertaking business activity. There is also a very small number of studies that focus on the role of authoritative parenting style on entrepreneurs' behaviours (Strenger and Burak 2005). It is, however, worth highlighting that these

studies are mainly interested in entrepreneurial behaviours rather than entrepreneurial success. Thus our intention is to elaborate on family issues but referring exclusively to effective entrepreneurial activity.

Thus we have condensed these deliberations into a purely hypothetical model embedded in the systems theory (consideration of parental attitudes), the cognitive-behavioural approach (the influence of beliefs on the actions one takes), and the concept of facilitation-conflict. Judging by analogy to the family-work relations, it seems that the family system (of both the family of origin and one's own family) may exert (positive or negative) influence over entrepreneurial effectiveness though the mediating role of the cognitive-behavioural factor (beliefs and behaviours). It is thus a recognition of the theoretical perspective of facilitation/conflict and the cognitive-behavioural orientation.

What we have in mind when referring to the systems-integrating approach to entrepreneurial success is the fact of taking into account family factors that interact with one another on certain levels. For the purposes of simplification, we only consider one type of systems variables—the proposition of six parental attitudes (acceptance/rejection, autonomy, inconsistency, excessive protection, and excessive demands) as put forward by Plopa (2008), which has been empirically verified. Nevertheless, we assume the most important issue is not the sole identification of parental attitudes in people who achieve entrepreneurial success but verification of the contribution of interactions within the *whole configurations* of such attitudes to accounting for variance of entrepreneurial success. Such an approach raises numerous intriguing questions: for example, is there such a constellation of parental attitudes of both parents that could partially contribute to facilitation of entrepreneurial success? Or is it possible to find such a set of family factors that could increase the chance of predicting an entrepreneur's failure?

So that the Reader is provided with a better overview of our deliberations, we have illustrated each step on the way with figures, starting from the model of direct relationships between family factors and entrepreneurial success, through a mediatory model, and ending with a mediatory-moderating one.

In the end, we would like to go back to the issue of limitations regarding the above-mentioned (in the introduction) subjectivism of self-reporting indicators of entrepreneurial success. The issue also recurs with regard to evaluation of parental attitudes. This is because evaluation of these attitudes is frequently based on retrospection (as adults evaluate their relationships with parents during childhood and adolescence), which cause the levels of variables to be "*distorted*" in consequence of the influence of both subjectivism and the time factor accompanied by the natural processes of forgetting or "change of emotional state" (as present experiences or mood at the time of filling the questionnaire in may modify/change the way a persons sees the past attitudes of the parents towards them). These are the implications of using the questionnaire-based methods in social studies, which opens the door for further discussion about the adoption of self-reporting methods. Such discussion, however, is not the subject-matter of this chapter.

As this short chapter concerns only theoretical model of relationships between family factors and entrepreneurial success with mediating role of cognitive and

behavioural variables and moderating role of sex, our main goal was to stress the importance of developing of this new research area. However, we think that the other important thing is to discuss the way in which the goals highlighted in this chapter should be achieved. At this initial stage of theoretical discussion, we can only recommend quantitative approach with using some questionnaires to measure e.g. parental attitudes, beliefs (e.g. hope to success) and entrepreneurial success.

Another important thing is to discuss a way to measure behavioural part of model (behaviours) and to analyse methods serving to evaluate entrepreneurial success. As this issue is "fragile" and "ambiguous" and this chapter has some editorial limitations, the other paper should be dedicated to this topic. And this mean that each part of model should be detailed analysed about the most appropriate way of measurement with indicating advantages and disadvantages of using each method.

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Personality Traits of the Partners and Performance in the Franchise Agreement

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Abstract Franchising is a form of entrepreneurship in which the franchisor identifies and exploits market opportunities and takes risks by starting businesses within the franchise. The franchise is governed by a contractual relationship between the franchisor (entrepreneur) and franchisee. Franchisees are responsible for spreading the franchisor's business idea throughout the market. This chapter describes the franchisor's and franchisee's personality traits, which act as determinants of the success of the business idea. Knowledge of the franchisor's personality traits helps potential franchisees select franchise brands with which to establish formal contractual relationships. Similarly, knowledge of franchisees' personality traits helps franchisors select suitable candidates, preventing the agency relationship between franchisor and franchisee from being violated and safeguarding against opportunistic behaviour. The chapter offers a review of research discussing the applications of psychology to franchising as a form of entrepreneurship and thus identifies the main psychological traits required of franchisors and franchisees to ensure franchise success.

Keywords Franchise • Personality traits • Opportunistic behaviour

1 Introduction

The literature that draws a distinction between franchisor entrepreneurs and independent entrepreneurs based on personality traits and socioeconomic variables fails to provide conclusive evidence that one type of entrepreneur is any less entrepreneurial than the other. The scarce literature on this topic shows that franchisees are attracted by a franchise-based form of business ownership that lets them become part of a larger, established system with a tested business idea and a recognised brand. While franchisees retain ownership and a certain degree of independence, they receive training, technical and commercial support, and financial assistance. These motivations have only been considered for franchisees with just one outlet.

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Specifically, the franchising research has drawn upon entrepreneurship (Anderson et al. 1992) and psychology (Felstead 1991; Mesconi and Montanari 1981) to explain the reasons for entering into the franchise business from the perspective of franchisees with just one outlet. However, according to the literature in entrepreneurship a variety of entrepreneurial profiles of franchisees can coexist within a same chain (Grünhagen and Mittelstaedt 2005).

This chapter reviews the psychological traits that influence the selection of partners with whom to enter into and maintain a franchise relationship to ensure that this relationship has a high probability of success. Accordingly, the chapter has the following structure. Following the introduction, Sect. 2 describes the background regarding the partner selection criteria applied by the franchisor during the franchisee selection process, as well as the criteria applied by the franchisee when selecting a franchisor. Section 3 analyses the franchisor's trade equity and the franchisee's trust in the franchisor in building a successful relationship, providing separate descriptions of the franchisor and franchisee psychological traits that affect the performance of the franchise relationship. Finally, Sect. 4 presents the conclusions of this chapter.

2 Partner Selection in Franchising

The need to conduct research when selecting partners to enter into a relationship is well documented. Altinay and Miles (2006) point out that using a well-defined selection process and strict selection criteria helps control the behaviour of franchisees before entering into the relationship and aids their integration within the broader existing franchise network. Doherty (2009) also acknowledges the importance of a selection process and selection criteria in international franchising. In his study, Doherty (2009) observed that the franchisor adopted a different perspective depending on who initiated the selection process. If the franchisor initiated the process, then a strategic perspective was adopted during the process. If the franchisee initiated the process, then an opportunistic perspective was adopted during the process. When the franchisee initiates the process by becoming interested in a brand, the franchisor applies an individual cognitive process (Brookes and Altinay 2011) and does not employ partner-related criteria, instead mainly employing financial criteria. When the franchisor initiates the process, he or she applies a formal organisation structure to the process (Brookes and Altinay 2011) and mixes task-related criteria—financial stability, business know-how, local market knowledge, and knowledge of the brand and the strategic direction of the business—and partner-related criteria—chemistry between the franchisor and franchisee, for example.

In his study, Altinay (2006) found that selection criteria varied depending on the stage of the selection process of international franchisees. In the early stages of the process, the franchisor used criteria related to future franchisees' personal traits, which are essential for performing the tasks necessary for the franchise to succeed. These traits are determined by the strategic context of the franchise business, the markets of different countries, and the nature of the business itself. Credibility and

reputation, however, are the relevant criteria for franchisor and franchisee (Brookes and Altinay 2011; Soriano 2003).

When franchise relationship negotiations are initiated, the dominant criteria are partner related. Personal chemistry is the main criteria used to evaluate the compatibility between franchisor and franchisee and ensure a negotiation process that culminates in successfully established relationships. The cultural distance between franchisor and franchisee in international franchises may complicate partner selection (Brookes 2014). Understanding the role of culture in the selection process is important for ensuring the sustainability of the franchise relationship. Accordingly, recognising the value and mutual risk, the compatibility of the vision of the business between both parties, and the objectives and culture of the organisation are the dominant criteria during this stage of the process and are apparently essential for both franchisor and franchisee.

Finally, the ability to retain control and identity are two non-negotiable criteria (Brookes and Altinay 2011). These criteria relate to the internal objectives of the franchisor, who seeks the self-preservation of his or her business. These criteria are based on the franchisor's experience more than the experience of future franchisees. These criteria are important for both franchisor and franchisee, yet each one adopts a different approach. The franchisor focuses on the control and identity of the brand, whereas the franchisee focuses on the control of his or her portfolio and corporate identity.

Table 1 summarises the different task-related and partner-related criteria used by franchisors in the franchisee selection process. In Table 1, the stage of the selection process is not considered. Psychological aspects such as personality, attitude, psychological profile, and chemistry are all cited as criteria for franchisee selection.

Both the franchisee's selection of the franchisor and the franchisor's selection of the franchisee are necessary for the two parties to enter into a relationship. Furthermore, both selection processes have implications in terms of the struggle for power and control between franchisor and franchisee. This struggle, which

Table 1 Literature review of the criteria applied during the franchisee selection process

Criteria	Authors	Context
Financial capability, experience, management skills, demographic characteristics, attitudes towards business	Jambulingam and Nevin (1999)	National franchise agreement
Personal characteristics, financial strength, attitudes and personality, psychological profiling, formal education, general business and industry-specific experience	Clarkin and Swavely (2006)	
Operating ability, financial capability, experience and personality	Hsu and Chen (2008)	
Partner need recognition, 'right chemistry'	Doherty and Alexander (2004)	International franchise agreement
Financial strength, ability to secure prime retail space, knowledge of the local market	Choo et al. (2007)	

becomes apparent once the franchise relationship has been entered into, starts during the partner selection phase. Both franchisor and franchisee employ their selection criteria as social and administrative control mechanisms to achieve other objectives (expectations) throughout the relationship. The key observation here is that franchisees exploit their criteria to demonstrate their power of negotiation and subsequently negotiate more autonomously during the franchise relationship stage.

3 Franchise Relationship

The effective management of a franchise relationship is acknowledged as a key ingredient for building an enduring, successful relationship (Weaven and Frazer 2007). Relationship management refers to relational or social control through the development of shared organisational rules and practices and better coordination of activities between the parties. A well-managed relationship can also help break down barriers between franchisor and franchisee and increase interactions between the two to achieve both parties' objectives.

Relational marketing stresses the importance of building a mutually beneficial relationship between the firm and its stakeholders (Palmatier et al. 2006). The franchise relationship differs from a traditional business (B2B) relationship because of the franchise relationship's social and subjective nature according to which relationship quality depends on a mixture of rational and emotional factors (Dant et al. 2013; Belso-Martínez et al. 2017). Two specific factors stand out in franchise relationships: the franchisor's trade equity and the franchisee's trust in the franchisor (Badrinarayanan et al. 2016). The franchisor's trade equity refers to the franchisor's reputation among franchisees in terms of honesty, trustworthiness, and concern for franchisees (Davis and Mentzer 2008). Franchisees assess the motives and behaviours of franchisors based on direct interaction with the franchisors themselves and sources of commercial and trade data. The franchisor's good reputation, earned through trustworthiness and performance, serves as a pledge of supportive behaviour in the future and is therefore likely to be attractive for franchisees seeking to establish committed relationships (Davis and Mentzer 2008; Welsh et al. 2016).

Franchisors accumulate trade equity over time. This trade equity is strengthened as the franchisor invests in bettering his or her franchisees and mutually improving each other's performance. When franchisors provide valuable knowledge resources and go beyond formal, legally binding agreements (i.e., high trade equity), (1) franchisees are more likely to invest in transaction-specific assets to maintain a steady relationship with the franchisor, and franchisors are more likely to (2) attract new franchisees and (3) strengthen relationships with existing franchisees (Nyadzayo et al. 2011). Franchisors develop their trade equity through actions such as offering strong support, exchanging information, and making efforts to intensify the relations with franchisees. These actions improve the franchisee's attachment to the brand, positive evaluations and attitudes, and commitment to other franchisees (Nyadzayo et al. 2011). In addition, these actions alleviate franchisees' concerns that the franchisor may exploit franchisees' vulnerability (Badrinarayanan et al. 2016).

In a system such as franchising where interdependence is mutual yet control is asymmetric, the success of the relationship depends greatly on shows of trust between franchisor and franchisee. When franchisees trust franchisors, franchisees become more confident in the franchisors' competence and integrity, which in turn leads to cooperative, supportive behaviours (Altinay et al. 2014; Davies et al. 2011). When the level of trust is high, franchisees value their relationship with the franchisor and develop positive attitudinal and emotional behaviours towards the franchisor (Delgado-Ballester and Munuera-Alemán 2005). Trust in the franchisor fosters a sense of solidarity with the brand and a sense of community created around the brand. Franchisees' trust in the franchisor therefore influences (1) the development of psychological bonds with the franchisor's brand, (2) interactions among franchisees, (3) the integration of other franchisees within the community who share the same enthusiasm for the brand (Badrinarayanan et al. 2016), (4) the participation of franchisees in communal, social, brand promotional, and other such voluntary activities that strengthen brand value (Becerra and Badrinarayanan 2013), and (5) opposition to competing brands (Muniz and O'Guinn 2001). All of these effects of trust build franchisees' commitment to the brand so that franchisees are highly motivated to interact and connect with the brand. Examples of this motivational state are franchisee behaviours that transcend simple transactions (e.g. using the product the franchisor is selling). Such behaviours are the result of cognitive, emotional, and behavioural investment through interactions with the brand. Franchisees' commitment is one of the keys to a successful franchise relationship because it creates a sense of responsibility for the success of the brand. Committed franchisees also support the mission of the franchisor and participate in franchisors' programmes and activities (Hackel 2010). Hence, the franchisor should increase his or her involvement in cultivating and supporting the brand community among franchisees, developing deeper affective links, and strengthening relationships with franchisees (Samu et al. 2012).

3.1 Franchisor Psychology

To attract franchisees and compete more effectively with other entrepreneurship opportunities, franchisors must develop strong brands that are perceived as unique and attractive by their target audience, namely future franchisees and consumers (Zachary et al. 2011). Although the responsibility of managing a brand depends on both the franchisor and the franchisees of that brand (Pitt et al. 2003), the success and the implementation of marketing activities depend considerably on the brand's scope to develop brand resonance among franchisees (Zachary et al. 2011).

Franchisors attempt to develop a strong brand link among franchisees to motivate them to engage in appropriate behaviours (Nyadzayo et al. 2011) and build intense, active relationships with franchisees. To do so, the franchisor takes actions aimed at raising the brand's profile (brand salience), achieving good performance (brand performance), meeting the psychological and social needs of franchisees and

consumers (brand imagery), spreading positive opinions and evaluations of the brand (brand judgments), and creating favourable emotional responses and reactions to the brand (brand feelings). These actions create a deep, intense psychological attachment to the brand among franchisees, together with the attendant loyal behaviours. The franchisee's psychological attachment to the brand means that when the franchisee sells the brand's products, he or she is actually selling the values and image represented by the brand (e.g. a lifestyle) rather than just the physical product itself (Badrinarayanan et al. 2016).

The franchisor fosters a psychological bond between the franchisees and the brand, strengthening the value of the relationship with the brand or the previously discussed trade equity. Together with the franchisees' trust in the franchisor of the brand, this strong trade equity manifests itself in behavioural loyal and attitudinal attachment by franchisees as well as the previously discussed sense of community and active engagement (Keller 2013). Behavioural loyalty or the continued intention to remain a member of the franchise system is an important indicator of strong franchisor-franchisee relationships (Chiou et al. 2004; Mas-Tur et al. 2015). Given that franchisors invest considerable resources in selecting and training franchisees, developing brand loyalty reduces the likelihood that franchisees terminate the relationship in the near future (Meek et al. 2011). Loyalty is complemented by attitudinal attachment, understood as an emotion-laden bond with a brand that prompts the preservation of the franchisee's proximity to and relationship with the brand.

3.2 Franchisee Psychology

Because an individual's personality affects the cognitions, motivations, and, consequently, the behaviours of that individual, it is likely that the franchisee's personality also affects the performance of the franchise relationship—for example, in terms of the franchisee's compliance or violation of the franchise agreement—and may explain why perceptions of quality vary across different franchises (Dant et al. 2013). Personality measures have been used by franchisors as a key input control strategy during franchisee recruitment (Castrogiovanni et al. 2006). Specifically, there is a consensus that five personality traits—extraversion, agreeableness, conscientiousness, emotional stability, and imagination—are significant predictors of performance in jobs that require interpersonal interactions, as is the case of the franchise (Weaven et al. 2009). The quality of a franchise relationship is defined according to three factors: trust and commitment, both discussed earlier, and satisfaction. Satisfaction refers to the positive affective response by an individual to the accumulative assessments of the interaction experiences with that individual's partner, and it is critical to preserving the relationship (Grace and Weaven 2011).

Franchisees with an energetic, dominating personality that leads to impulsive decisions and risky behaviours—extraversion as a personality trait—are unlikely to be happy if the franchisor has a dominant position of power in the network. This personality trait may be associated with hostility, anger, and dissatisfaction (Buss

1991). These possible manifestations of extraversion behaviours may negatively affect the delivery of the service to the end consumer and the resolution of possible conflicts with the franchisor, other franchisees, or area representatives, for example. As a result, commercial relationships may be weakened and the quality of the franchise relationship may be undermined (Dant et al. 2013). This may affect the mutual understanding of the values and goals of partners and restrict cooperative problem solving, thereby further stifling value creation within the franchise network (Wu and Cavusgil 2006).

Franchisees with an agreeable personality are generally confident, flexible, altruistic, tolerant, cooperative, good-natured, and friendly—agreeableness as a personality trait. Such franchisees encourage cooperative working relationships and express a preference for developing positive, loyal interpersonal relationships. They are also highly likely to seek support from their network. This personality trait inhibits individuals' willingness to drive hard bargains or manipulate others for personal gain (Zhao and Seibert 2006) and reduces the likelihood that individuals become competitive or participate in conflicts (Mount et al. 1998). Accordingly, when franchise agreements grant greater power and control to the franchisor, franchisees who are prepared to follow the franchisor's directives and collaborate with the franchisor will be more likely to establish stronger franchise relationships. So, franchisees with a high degree of agreeableness and a low degree of extraversion will be able to build better relationships with their franchisors (Dant et al. 2013).

Franchisees with the conscientious personality trait are characterised by inspiring trust, persevering in pursuit of specific, well-defined goals, behaving obediently and morally, and displaying goal-oriented behaviours. They are hard-working, well-organised, action-oriented individuals who tend to take responsibility for their actions (O'Brien and DeLongis 1996; Welsh et al. 2016). This personality trait is well suited to professional situations that require a high degree of autonomy. Franchisees with this personality trait generate respect and trust in the relationship and facilitate cooperation and power-sharing. Franchisors are more likely to develop an emotional attachment with trustworthy franchisees who achieve their goals (Dant et al. 2013).

Emotional stability is another franchisee personality trait that is sought after by franchisors. Emotionally stable franchisees are calm and relaxed and respond well to stressful situations because they know how to adapt to such situations—they consider these situations a challenge rather than a threat. They also know how to resolve conflicts and deal with negative feedback. Franchisees with this personality trait are more effective as leaders (Judge et al. 2002) and are more likely to develop stronger franchise relationships because they adopt rational approaches to communication with partners and minimise dysfunctional conflict that might arise from emotional assessments of the franchise situation. Because emotionally stable franchisees are more committed, franchisors are more likely to develop a closer bond with them (Dant et al. 2013).

Finally, imagination is a sought-after personality trait of company employees because it characterises individuals with a drive to recognise and act upon new opportunities (Ciavarella et al. 2004). Imagination has this effect because people with this trait are curious, open minded, and emotionally aware. Although

franchisees are granted some independence in the running of their outlets (e.g. promotional initiatives within the local market), franchisees are normally required to strictly obey the formal guidelines set forth in the franchise agreement. Therefore, the need to be creative, search for new ideas, and solve problems is less important for franchisees than for entrepreneurs because any divergent form of thinking may cause a misalignment of incentives between franchisor and franchisee, thereby weakening the franchise relationship. Most franchise chains encourage franchisees to follow established policies and practices and implement the innovations and strategies developed by the franchisor (Dant et al. 2013).

4 In Conclusion

The discipline of psychology is present when an individual starts a business through franchising. The franchise relationship differs from a traditional business (B2B) relationship because of its social, subjective nature according to which the quality of the relationship depends on a mixture of rational and emotional factors. In the franchisor-franchisee relationship, the process and criteria for selecting new partners depends on which party initiates the selection process. According to the literature review presented earlier in this chapter, the franchisor applies psychology-related criteria to a greater degree when he or she takes the initiative in the selection process than when the potential franchisee takes the initiative in the selection process. Franchisees who wish to start a business seek quality in the franchisor-franchisee relationship more than they seek the franchisor's knowledge regarding the business idea. To discern the quality of the relationship across different brands, the franchisee must be aware of the brand resonance, which consists of two relational factors: the franchisor's trade equity and the trust generated by the franchisor. When the franchisor initiates the selection process, in contrast, he or she seeks future franchisees with personality traits consistent with the following profile: low extroversion and imagination and high agreeableness, conscientiousness, and emotional stability. An example of successful case in Spain is the bar and restaurant chain Cervecería La Sureña. In this case, the franchisor demonstrates expertise by operating with full transparency and offering potential franchisees all available information. Thus, if these potential franchisees decide to invest in the Cervecería Sureña franchise, they will have a clear idea of the environment and the conditions in which they will be working.

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The Importance of Empowerment in Entrepreneurship

Daniel Henao-Zapata and José M. Peiró

Abstract Empowerment comes at a time when global competition and change require people to take initiative and be innovative. Based on the active, persistent, and change-oriented behaviors associated with psychological empowerment, the chapter states that empowerment can contribute to entrepreneurship. The dimensions of empowerment that suggest a theoretical and empirical link with entrepreneurial behavior are discussed. Several propositions regarding the interplay between empowerment and entrepreneurship are formulated. The chapter describes paths to promote empowerment and entrepreneurship in applied context and suggests future directions to advance research on empowerment in the field of entrepreneurship.

Keywords Empowerment • Entrepreneurship • Active performance

1 Introduction

Empowerment comes at a time when global competition and change require people to take initiative and be innovative (Spreitzer 1995; Lee and Koh 2001). Empowered people act independently in situations of risk and uncertainty, anticipate problems, and demonstrate persistence and resourcefulness when challenging conditions at work appear (Spreitzer 1995, 1996, 2008). Empowerment appears to be particularly important in situations where people need to work independently, where perseverance and hope is necessary, and in contexts where people need to be

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more proactive in making sense of situations and determining the appropriate course of action. The potential outcomes of empowerment expand to individuals, organizations, and societies (e.g., Seibert et al. 2004; Spreitzer 2007; Goodman et al. 2016). Outcomes of empowerment such task performance, proactive behavior, and innovation suggest that empowerment theory is relevant to broader contexts outside organizational settings. Despite the accumulating evidence on the positive effects of empowerment in diverse contexts, research has omitted the link between empowerment and entrepreneurship. Such caveat anticipates an attractive field of research. This chapter represents a first attempt to study the effects of empowerment in entrepreneurship. Because of the active, persistent, and change-oriented behaviors associated with psychological empowerment (Spreitzer 1995), we argue that empowerment can contribute positively to entrepreneurship.

2 Entrepreneurship: Concept, Features and Measures

The role of the entrepreneur consists in discovery and exploitation of opportunities (Shane and Venkataraman 2000). Such role usually requires making rapid decisions under uncertainty and with scarce resources, work harder than most employees, and have access to a wide array of skills, knowledge, and abilities (e.g., management, marketing, innovation, and leadership) (Shane 2003; Rauch and Frese 2007; Yao et al. 2016).

Entrepreneurship is determined by a number of factors that include individual differences (e.g., personality, human capital), environmental economic factors (e.g., type of industry), and cultural and geographical factors (e.g., national culture, or the institutional environment). Outcomes of entrepreneurship relate to development of new products, services, strategies, processes, organizational forms, and new markets that did not exist. Entrepreneurship is typically measured in terms of business creation and business performance. The complexity of models of entrepreneurship (considering antecedent variables and outcomes as well as the connections between those variables) goes beyond the scope of this chapter.

Frese (2009) developed an entrepreneurship framework that account for the complex interaction between individual differences, environmental economic factors, and cultural and geographical factors (see Fig. 1). From the perspective of action theory (Frese and Zapf 1994), the author elaborated on the effects of the entrepreneurs' personality traits, and their human capital on entrepreneurial success. According to the model, such relationships are mediated by action styles (or characteristics of active performance) such active goals and visions or active feedback seeking, among other ways of information processing and acting in the environment (see Fig. 1). The characteristics of active performance are at the center stage in all phases of entrepreneurship. Such characteristics are not mere actions, but rather ways of performing actions. According to Frese and Gielnik (2014), more active actions characteristics lead to actions that are more likely to be successful. They provide examples to support their hypotheses, such that active forms of

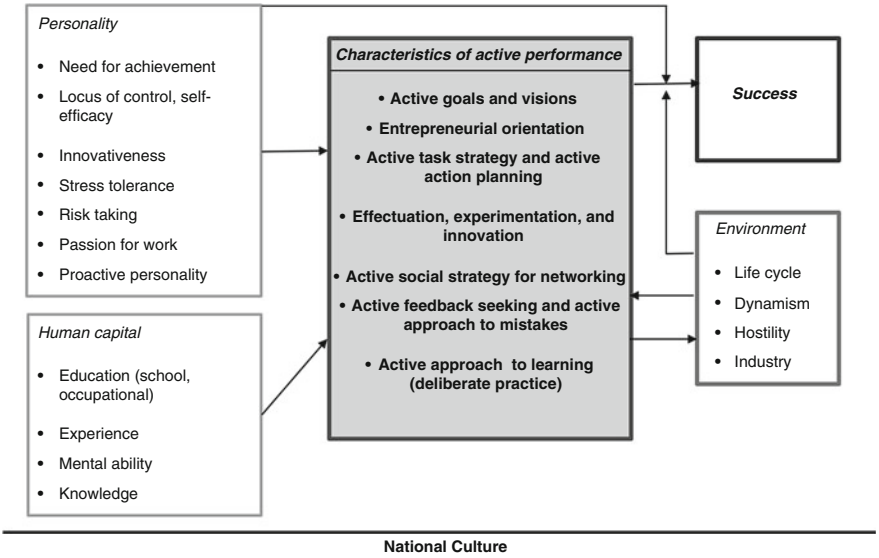

Fig. 1 Example of a complex model of entrepreneurship (Frese 2009, p 461)

learning (i.e., deliberate practice), or active network strategies are related to entrepreneurial success (Unger et al. 2009; Zhao et al. 2010). Frese (2009) argues that the typical facets of personal initiative—being self-started, future-oriented, and overcoming barriers—tend to lead to success when they affect the different action characteristics. Individual characteristics in interaction with the environmental ones affect entrepreneurial activities which in turn change the environment. The environment includes the development stage of the firm (life cycle), the frequency of change (dynamism), economic factors such as material or structural resources (hostility), and type of business (industry). Embedded in a specific geographic region and cultural context (national culture), the individual differences and the environment are also seen as moderators of the effect that characteristics of active performance have on all phases of entrepreneurial success: opportunity identification, refinement of business concept and resource acquisition, and survival and growth.

3 Empowerment: Concept, Antecedents and Consequences

Spreitzer (1995) defined psychological empowerment as a motivational construct manifested in four cognitions: competence, self-determination, meaning, and impact. "Competence, or self-efficacy, is an individual's belief in his or her ability to perform activities with skill" (Spreitzer 1995). Self-determination refers to a sense of having choice in initiating and regulating actions (Deci and Ryan 1987), reflecting autonomy at work. Meaning refers to a match between the demands of a

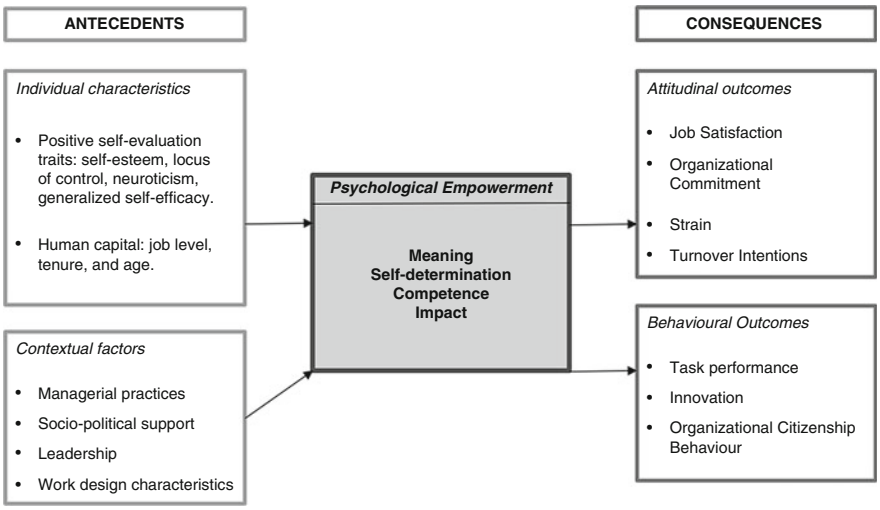

Fig. 2 Individual empowerment framework, adapted from Seibert et al. (2011)

work role and own beliefs, values, and behaviors (Hackman and Oldham 1980). Impact is the extent to which an individual can influence strategic, administrative, or operational outcomes at work. Together, such dimensions reflect a sense of control at work and an active orientation through which individuals wish and feel able to shape their work role and context (see Fig. 2)

Psychological empowerment is influenced by several factors that involve individual characteristics (e.g., personality traits, human capital), and contextual factors (e.g., work design characteristics). Outcomes of psychological empowerment refer to attitudinal (e.g., job satisfaction) and behavioral (e.g., innovation) consequences at work. Those attitudinal and behavioral outcomes are typically studied in organizational settings. Since entrepreneurs do not work for a given organization, we center our attention on the attitudes and behaviors more directly related to entrepreneurship. Specifically, we focus our attention on the effects of empowerment on goal achievement, proactive behavior, innovation and active performance.

3.1 Direct Relationships Between Psychological Empowerment and Entrepreneurial Behaviors

Spreitzer (2008) argued that the essence of empowerment is the interplay between the four dimensions rather than just the isolated effects of each one. A combination involving high-perceived competence, self-determination, meaning, and impact predictably has more potential to contribute to entrepreneurship. As follows, we explain the direct effects of such combination on behaviors intrinsically related to entrepreneurship.

3.1.1 Goal Achievement

Previous work, including meta-analytical and empirical studies, provides evidence showing a significant relationship of psychological empowerment and performance (e.g., Spreitzer 1995; Spreitzer et al. 1997, 2011; Zare et al. 2015). Spreitzer (1995, 1996, 2008) argued that psychologically empowered individuals act independently in situations of risk and uncertainty, anticipate problems, and demonstrate persistence and resourcefulness when challenging conditions at work appear. Empowerment describes beliefs suggesting that the person is confident of his (her) ability to accomplish goals; it includes an inner conviction of one's ability to control one's environment, the feeling that one can perform actions that impact. Previous research shows the positive effects of competence in terms of performance at work (e.g., Speier and Frese 1997; Ozer and Bandura 1990; Rauch and Frese 2007). Impact beliefs should increase effort and persistence towards goals because individuals who perceive high impact foresee the accomplishment of their goals and exert action to achieve them. Individuals who believe themselves as having an impact get their ideas heard and can influence the system on which they interact (Ashforth 1989), and thus are more likely to perform better than those who perceive themselves as having little impact. Spreitzer et al. (1997), examined the contribution of each of the four dimensions of psychological empowerment on two independent samples including (1) managers in a manufacturing organization, (2) and employees in the service sector, and found that both competence and impact were strongly related to managerial effectiveness (i.e., performance standards, peers' comparison, overall success, and performance as a role model at work). Empowered business owners should assert empowerment managerial practices among their employees such as the distribution of power, information and knowledge (Bowen and Lawler 1995; Burke 1986), which should increase the chances to achieve entrepreneurial goals. Self-determination may also contribute to goal achievement. Individuals who are able to choose how to do their jobs are higher performers than those with little autonomy (Thomas and Tymon 1994; Spreitzer et al. 1997). People who are more self-determined in activities like developing strategies or setting performance appraisals, are more committed and motivated to attain their goals. Meaning towards one's job should result in increased motivation to accomplish goals. Thus, individuals with high perceptions of competence, self-determination, meaning, and impact are expected to manifest psychological states, behaviors, and skills that lead them towards accomplishment of goals. Empowerment translates into psychological and behavioral manifestations such self-confidence, self-regulation, flexible thinking, active engagement with the environment, leadership and dominance (Diener and Biswas-Diener 2005). Such manifestations should increase chances for entrepreneurial success. For example, a self-confident entrepreneur would more likely feel competent to sell his (her) products or services to clients. Self-regulatory ability can contribute to allocate time efficiently to different tasks such idea's generation for new products or development of formal sale records and distribute efforts accordingly. Flexible thinking and active

engagement can be beneficial for identifying new opportunities and persevering in the achievement of business goals. Leadership and dominance should contribute to run firms and manage employees (e.g., guiding and motivating them), and strengthen a business position in the market. In this manner, psychologically empowered individuals are more likely to succeed in the pursue of entrepreneurial goals.

3.1.2 Proactive Behavior

Empowerment unleashes the productive potential of individuals (Samman and Santos 2009), and links their strengths and competencies with proactive behaviors and change (Perkins and Zimmerman 1995; Rappaport 1987; Hemang et al. 2017). Spreitzer (2008), argued that psychologically empowered individuals impact on the environment through proactive behaviors; they perform tasks in an active way (Spreitzer 1995), manifest energy and desire to act, and evoke actions that are not mediated by others or dependent upon direct rewards. Such individuals are thought to work in the absence of close supervision, control their own task accomplishment, manifest resiliency and motivation in the face of problems or ambiguity, and initiate new tasks as opportunities arise (Thomas and Velthouse 1990). Proactive behaviors are important because they refer to anticipatory, change oriented, and self–initiated behaviors (Frese 2009; Frese and Gielnik 2014), which are fundamental to entrepreneurial behavior (Rauch and Frese 2007; Tornau and Frese 2013). For example, personal initiative is a proactive behavior characterized by being self-starting and future-oriented that overcomes barriers (Frese and Fay 2001), which predicts success in entrepreneurship (Frese 2009; Krauss et al. 2005; Glaub et al. 2014). Empowerment facilitates proactive behavior by inducing an implemental mindset (Keltner et al. 2003), and increasing freedom of action and decreasing avoidant behavior (Ozer and Bandura 1990). An implemental mindset refers to readiness to move ahead looking for the means to action. Individuals who feel psychologically empowered are more likely to act freely and independently in situations of risk and uncertainty, anticipate problems, and demonstrate persistence and resourcefulness when challenging conditions (e.g., high uncertainty) appear at work (Spreitzer 1995, 1996, 2008). Such individuals mitigate the ambiguity that come from having less direction and make sense of "weak" or uncertain situations, determining the appropriate course of action and seeking feedback about their performance (Spreitzer 2008). Such behaviors constitute a proactive approach that should increase the chances for entrepreneurial success.

3.1.3 Innovation

Psychological empowerment has been consistently linked to innovation at work (e.g., Lee and Koh 2001; Sun et al. 2012; Pieterse et al. 2010; Spreitzer 1995; Seibert et al. 2011; Sinha et al. 2016; Odoardi et al. 2015). Kanter (1984), in her

studies on entrepreneurial organizations, already stated that empowerment and innovation are intrinsically related. Thomas and Velthouse (1990), suggested a link between empowerment and flexibility which should contribute to innovation (Spreitzer 1995; Georgsdottir and Getz 2004). Ultimately, the dimensions that define psychological empowerment relate to intrinsic motivation (Thomas and Velthouse 1990), which has been linked to innovative behaviors (Redmond et al. 1993). Also, empirical research has shown the association between psychological empowerment and innovation at work (Spreitzer 1995). In a study examining the relationship between psychological empowerment and leadership on mid-level supervisors, Spreitzer et al. (1999), found that supervisors who reported higher levels of empowerment were judged as more innovative by their subordinates. In this manner, both theory and research suggest that empowerment, should have an impact on innovation. Empowerment creates a lower resistance to change and willingness to invest in the future (Kanter 1984), and this in turn is thought to facilitate innovation. Motivators such as meaning, self-determination, competence and impact are likely to predispose individuals to implement new ideas and suggestions for change that represent innovation at work. Psychologically empowered individuals see themselves as competent, and thus tend to expect success and be innovative at work (Spreitzer 1995; Amabile 1988; Redmond et al. 1993); they perceive themselves as autonomous agents who have an impact, and therefore should feel less constrained than others by rules or technical aspects at work, making them more likely to be creative and innovative (Spreitzer 1995). Entrepreneurship is characterized by innovative behaviors (Yan and Yan 2016). Entrepreneurship and innovation are positively related to each other and interact to help a business flourish (Zhao 2005). Innovation refers to implementation of new or substantially changed products, processes, or services adapted to current or future demands. Through innovation entrepreneurs exploit opportunities for products or services (Carayannis et al. 2015). Innovation is vital to firm's success and sustainability in today's dynamic and changing environment (Zhao 2005). Thus, any factor predisposing innovation should contribute to entrepreneurial success (e.g., business creation and business performance).

4 Dimensions of Empowerment Leading to Characteristics of Active Performance in Entrepreneurship

4.1 Why Should the Dimensions of Empowerment Lead to Active Entrepreneurship?

Action is at center of entrepreneurship (Frese 2009). Frese and Gielnik (2014) stated that more active ways of performing actions (rather than non-active), lead to actions that are more likely to be successful in entrepreneurship. The characteristics of active performance are at the center of all phases of entrepreneurship. From here,

any mechanism predisposing active actions (as opposed to reactive) should contribute to entrepreneurship. Empowerment reflects an active orientation towards the work role and context (Spreitzer 1995; Spreitzer 2008). An active orientation towards work should result in more active actions, which in turn should make entrepreneurs more likely to succeed (Frese and Gielnik 2014). Because of the active, persistent, and change-oriented behaviors associated with psychological empowerment (Spreitzer 1995), the dimensions of empowerment—competence, self-determination, meaning, and impact—may lead to characteristic of active performance such as active feedback seeking or active resource search. In this sense, Spreitzer (2008), already suggested that empowerment may be an important mechanism accounting for *how* and *why* proactive individuals (i.e., individuals with proactive personality) manifest more personal initiative (Frese and Fay 2001), and proactivity (Grant and Ashford 2008). We argue that those entrepreneurs who have a strong perception of competence, self-determination, meaning, and impact, will predictably be more active and manifest more characteristics of active performance. Empowerment may contribute helping entrepreneurs to become master of their fates, trusting their capacity to influence their business and its environment. Based on research, we explain *why* and *how* the dimensions of empowerment can predict a more active approach to entrepreneurship and facilitate success.

4.1.1 Competence

Competence can contribute to characteristics of active performance in a wide range of business outcomes such survival, development, growth, and change (Bird 1988). Spreitzer (1995) defined competence as self-efficacy. Competence can be understood as self-efficacy because it refers to the belief that one is able to competently perform actions (Frese 2009; Bandura 1997). Self-efficacy is related to successful performance of diverse entrepreneurial roles and tasks (Chen et al. 1998), and, thus, should predispose characteristics of active performance in entrepreneurship.

Active Goal and Visions Self-efficacy relates to the capacity to take purposeful action (Narayan-Parker 2005). Individuals who perceive themselves as self-efficacious have confidence in their ability to accomplish goals (Chen et al. 1998); they are prone for searching challenges (e.g., cover a gap in the market) (Bandura 1997), and associate challenging situations (e.g. hard work, or competition) with rewards such profit or psychological fulfilment (Hisrich 1990). Self-efficacy influences an individual's goals level and assertion of effort and perseverance (Rauch and Frese 2007). Thus, individuals who see themselves as competent should be more active in regards of their goals and visions, establishing challenging and purposeful goals by themselves (instead of given by others), that are future-oriented (e.g. associated with rewards in the future), and persistent (e.g. asserting more effort and persevering when problems occur).

Active Task Strategy and Active Action Planning Self-efficacy is related to proactive and elaborated plans (Frese 2009). The perception of competence is useful to develop plans. Competence implies that one has more control over one's actions. More control relates to more *feasibility* and *desirability* to execute action; which are prerequisites of active planning (Frese 2009). People that feel prepared to accomplish future goals mentally simulate the action sequence to reach such goals. The more mental simulations reach into the future, the more active is the approach towards planning (Frese 2009). Moreover, self-efficacy predicts entrepreneurial intentions and the strength of entrepreneurial actions (Chen et al. 1998; McGee et al. 2009; Bird 1988; Krueger and Brazeal 1994; Zhao et al. 2005). A plan is a bridge between goals (intentions) and actions (Miller et al. 1986). People who feel competent should have higher entrepreneurial intentions and should plan more in order to materialize those intentions into actions. Individuals who see themselves as able to competently perform actions persevere when problems arise (Bandura 1997), anticipate the action environment and action parameters, and thus should develop plans actively (e.g., thinking about plan B if one plan does not work), and foresee strategies to implement them.

Effectuation, Experimentation, and Innovation Self-efficacy is thought to influence one's level of effort and persistence on several behaviors related to entrepreneurship such as opportunity recognition, uncertainty and risk management, and innovation (Rauch and Frese 2007). People who are confident on their ability to perform entrepreneurial roles and tasks perceive the environment as replete with opportunities and perceive a lower cost and risk to go for such opportunities (Zhao et al. 2005; Chen et al. 1998). Such individuals see themselves competent to deal with the environment and anticipate outcomes of success, perceiving a low possibility of failure and a high possibility to achieve business goals (Chen et al. 1998). Thus, people with high perceptions of competence would predictably be more confident to approach entrepreneurial tasks (McGee et al. 2009), such putting in operation new services (i.e., effectuation and experimentation), and shape the environment with their ideas (e.g., innovation).

Active Social Strategy for Networking The belief that one is able to competently perform actions predicts the strength of intentions and actions related to entrepreneurship (Krueger and Brazeal 1994). People high on perceptions of competence are confident to undertake tasks and roles in the entrepreneurial environment (Chen et al. 1998). As a part of their role, entrepreneurs should pursue, nurture, and broaden social networks. People who feel competent should have higher intentions and feel more confident to perform such role, and direct more effort and be persistent (Rauch and Frese 2007), towards tasks such as making appointments with potential clients.

Active Feedback Seeking and Active Approach to Mistakes Self-efficacious individuals perceive the environment full of opportunities and perceive low cost and risk to invest effort in such opportunities (Chen et al. 1998); they search for challenges (Bandura 1997) and are perseverant (Rauch and Frese 2007; Ozer and

Bandura 1990; Bandura 1997). Therefore, such individuals should be eager to experiment across entrepreneurial settings rather than avoid errors (or negative feedback) in such environment.

Active Approach to Learning Since people who see themselves as competent to perform tasks with skill search for challenges and persevere (Bandura 1997), perceive the environment full of opportunities (Chen et al. 1998), and associate challenging situations (e.g., learning) with rewards (e.g., enhanced performance) and fulfilment (e.g., satisfaction) (Hisrich 1990), they should invest more effort in activities aimed to improve their current performance level (i.e., deliberate practice).

4.1.2 Self-Determination

Entrepreneurship builds on the independent spirit of people to further new ventures (Lumpkin and Dess 1996). Self-determination should contribute to characteristics of active performance in entrepreneurship.

Active Goals and Visions Entrepreneurs need to act independently in order to bring forth an idea (e.g., goals) and carry it through completion (Lumpkin and Dess 1996). Empowered individuals are self-determined and independent, they establish their own goals and act upon them (Narayan-Parker 2002; Malhotra et al. 2002). Individuals who are self-determined and autonomous prefer to make own decisions and set their own goals (Rauch and Frese 2007). Since empowered individuals are mostly dependent on their own will and action, they should be more active, committed, and persistent in pursuing goals such as increasing sales or implementing more efficient processes into the market.

Active Task Strategy and Active Action Planning Empowered people are self-determined, they take control over resources (Narayan-Parker 2005), control their own task accomplishment (Thomas and Velthouse 1990), have ample knowledge and information about their work (Spreitzer et al. 1997), and take actions towards work goals (Spreitzer et al. 1999; Spreitzer 1996). Such individuals are in a better position to plan and schedule work, and to identify and manage obstacles to achieve optimal job performance (Spreitzer et al. 1997). Self-determined individuals plan by self-setting their goals and allocating time and place to accomplish them. Moreover, since self-determined individuals act autonomously they tend to plan contingent strategies to overcome possible failure on plans. Also, because they can choose ways, methods and processes to carry out their work they should anticipate what resources are needed and prepare to meet future demands. Thus, they are proactive in developing plans and strategies.

Effectuation, Experimentation and Innovation Self-determined individuals have the independent spirit necessary to try out ideas and further innovations into markets. Having choice in initiation and regulation of actions leads to the perception of autonomy, which enables opportunity-seeking behaviors (e.g., effectuation

and experimentation), and advantage-seeking behaviors (e.g., innovation) (Ireland et al. 2003). Perceived choice enhances flexibility and creativity (Deci and Ryan 1987; Thomas and Velthouse 1990), which should also facilitate experimentation and innovation (Sun et al. 2012; Spreitzer 1995; Georgsdottir and Getz 2004). Also, self-determination should facilitate experimentation and innovation in entrepreneurship by giving control and direction in situations characterized by low structure, scarce resources, and ambiguous information. Self-determined individuals experiment by trying out behaviors that they consider most effective to accomplish their tasks. Such individuals are self-started deciding *what* and *how* things should be done. Autonomous people act independently in spite of constraints (Frese 2009). Therefore, self-determined individuals show characteristics of active effectuation, experimentation, and innovation.

Active Social Strategy for Networking Individuals who have a sense of choice regarding their work roles tend to initiate new tasks as opportunities arise (Thomas and Velthouse 1990). Self-determined individuals act autonomously and perceive control over the environment. Therefore, they should act upon social opportunities for networking (e.g. reaching out a potential investor or partner), and perceive more control to maintain and increment their social network.

Active Feedback Seeking and Active Approach to Mistakes Perceived choice enhances initiative, resiliency and self-regulation (Deci and Ryan 1987; Thomas and Velthouse 1990). Self-determined individuals should take the initiative to try out their products or services (rather than avoid exposure), be resilient persevering when such try outs do not go well, and regulate themselves controlling the negative emotions that accompany errors. Hence, they should be more inclined to experiment and look for feedback actively.

Active Approach to Learning Deliberate practice (i.e., active approach to learning) "consists of individualized self-regulated and effortful activities aimed at improving one's current performance level" (Frese 2009). It makes sense that those individuals who are more self-determined will assert more effort and approach learning opportunities more actively.

4.1.3 Meaning

Entrepreneurs assert purposeful action toward meaningful goals. Meaning should foster characteristics of active performance in entrepreneurship.

Active Goals and Visions The perception of meaning serves to mobilize efforts towards goals. Meaningful implies that something deserves specific action, effort, attention, and high regard for consideration. Entrepreneurs elaborate on goals and visions and make purposeful actions towards ideas that are meaningful. Ultimately, meaning results in increased motivation (Bass 1985; Benis and Nanus 1985). The sense of meaning is what energize and aligns behavior and expectations to the task

at hand (Spreitzer et al. 1997). Such motivation should urge entrepreneurs to actively set goals, and maintain effort to carry them out.

Effectuation, Experimentation and Innovation High levels of meaning are expected to result in high involvement and concentration of energy (Spreitzer 1995; Kanter 1984; Thomas and Velthouse 1990). People who perceive an alignment between their ideas, and their values and beliefs, should be prone to take the risk to implement them (i.e., innovation), and sell them (i.e., experiment). Entrepreneurs that have a strong sense of meaning for what they do, should be actively involved in their businesses, investing more time in activities such exploring new ways to enhance their products or services, and concentrating more psychic and physical energy in discovering opportunities and implementing business ideas to exploit such opportunities.

Active Social Strategy for Networking Entrepreneurs who perceive their tasks, services or products as meaningful would predictably believe their business ideas are good enough to introduce them in social environments. Such perceptions should also encourage entrepreneurs to seek ways to distribute or increase the impact of their ideas. For example, by acknowledging the value (or meaning) of their products or services, entrepreneurs can feel more confident to actively approach potential investors or clients (instead of waiting for them to come), and to "bootstrap" their existing contacts to expand their network.

Active Feedback Seeking and Active Approach to Mistakes Feedback allows or detriments the sense of fulfilment in respect of one's desired behavior and expectations at work. People that have high perceptions of meaning should constantly seek for feedback in order to maintain them; they should test whether the actions they perform keep fulfilling their desired work behaviors, beliefs, and values or not.

Active Approach to Learning Meaning fosters a sense of identification and involvement at work (Seibert et al. 2011). Individuals who perceive their tasks and work roles as meaningful are likely to be more invested in their work (Spreitzer et al. 1997). Meaning can fuel motivation, increase willingness to work long hours, and enable persistence in the face of obstacles. Individuals tend to be actively involved and invest more time into activities that are meaningful to them. Thus, meaning should facilitate an active approach towards learning, increasing efforts towards improvement of one's performance level (i.e., deliberate practice).

4.1.4 Impact

People that see themselves having impact feel able to determine the environment and obtain desirable outcomes through their actions. Impact should facilitate characteristics of active performance in entrepreneurship.

Active Task Strategy and Active Action Planning Impact relates to perceived feasibility, which is prerequisite for active planning (Frese 2009). It makes sense

to be more proactive in planning if one feels more control over one's fate (Frese 2009). Contrarily, it does not make sense to plan for things that one does not perceive as attainable. Impactful individuals do not just randomly try anything, but execute purposeful and goal oriented actions. Such individuals deliberately plan thinking about potential scenarios, anticipating action parameters and the action environment (e.g., evaluating potential risks), preparing to meet future demands (e.g., detecting signals indicating future difficulties and opportunities), and developing reasonable hypothesis regarding the effect of their actions.

Effectuation, Experimentation and Innovation The perception of the ability to affect results is crucial to entrepreneurship (Mueller and Thomas 2001), because the propensity to act upon an opportunity (e.g., experiment or innovate) depends on one's perception of control over the environment (Shapero 1975). Individuals that are high on impact believe they have an influence over outcomes through ability, effort, and skills. Such beliefs should increase attempts directed toward the accomplishment of goals. Impactful individuals should tend to be innovative because they feel able to shape their environment (Spreitzer 2008), can affect strategic and operating outcomes related to their work (Spreitzer et al. 1997), and anticipate success.

Active Social Strategy for Networking Since impactful individuals see themselves as able to determine the outcomes on the environment, they should feel capable to manipulate the social environment in their interest. They should feel secure to approach new people and expand their social networks.

5 Direction of Influence Between Empowerment and Entrepreneurship

The directionality of empowerment relationships is not yet clear enough (Spreitzer 2008; Seibert et al. 2011; Boudrias et al. 2014). The relationship between empowerment and entrepreneurship may not be unidirectional. Over time, entrepreneurship can also affect individuals' perception of empowerment. Entrepreneurship provides autonomy, independence, and a feeling of being in control of one's life (Andersson 2008; Benz and Frey 2004; Blanchflower 2004). Blanchflower (2004), on his review of self-employment data from 70 countries, found that entrepreneurs were more likely to report "control over their lives" than people who were employed. Business activities often relate to the capacity to exercise autonomous action and purposeful behavior, which constitute empowerment manifestations (e.g., Wolf et al. 2015; Datta and Gailey 2012; Torri and Martinez 2014). People with businesses often define self-interests and assert choice, and consider themselves competent enough to have an impact on meaningful goals to them. Also, the experience of success can generate feelings of empowerment (Diener and Biswas-Diener 2005). Entrepreneurial success may lead to empowerment by heightening

positive emotions and attitudes such as fulfillment or satisfaction. Previous findings support this reasoning showing that entrepreneurs are more likely to report higher satisfaction with their lives in comparison to employed people (Blanchflower 2004). Research suggests that positive emotions lead to attitudinal and behavioral characteristics manifesting empowerment such feelings of self-confidence, energy, engaged activity, and creativity (Diener and Biswas-Diener 2005). Entrepreneurship may as well increase perceptions of competence, self-determination, meaning, and impact, because such dimensions endure with the work context (Bandura 1997; Spreitzer 1995; Lee and Koh 2001). For example, bringing forth new business ideas and earning a living independently may lead to perceptions of self-determination and meaningfulness. Mutual reinforcement between empowerment and entrepreneurship can thus occur. Empowerment and entrepreneurship may interact in a reinforcing loop towards active performance (e.g., personal initiative behavior) and change. We mentioned that entrepreneurial success might lead to perceptions of competence, self-determination, meaning, and impact. Such perceptions may then be drawn upon to enable more active and innovative actions. Psychological empowerment and entrepreneurship are both constructs that describe active "bottom-up" processes towards changes in work settings. Therefore, it is possible to think that empowerment and entrepreneurship are complementary and reciprocally influence each other. However, complementarity and reciprocity does not imply that both occur simultaneously, nor that they have equal effects, impact or strength. Further research should attempt to clarify the directionality and dynamics of the relationship between empowerment and entrepreneurship (e.g., Boudrias et al. 2014).

6 The Role of Empowerment in Promoting Entrepreneurial Success

As it has been pointed out, there is empirical evidence showing that the different components of empowerment are significant antecedents of the main characteristics of active performance (see Fig. 3). Moreover, there is empirical evidence suggesting that both empowerment and active performance enhance entrepreneurial behavioral outcomes (goal achievement, proactive behavior and innovation) and then entrepreneurial success. Based on our previous review, it may be hypothesized that empowerment will display two avenues of influence on entrepreneurial behavioral outcomes. One avenue depicts a direct influence of empowerment on behavioral outcomes, while the other suggests the influence on these behavioral outcomes through the characteristics of active performance. As Frese (2009) pointed out, the characteristics of active performance are also significant antecedents of behavioral outcomes that, in turn contribute, to entrepreneurial success. Thus, according to our proposed model empowerment plays a significant role to promote relevant behavioral outcomes. Based on the theoretical models reviewed and the empirical evidence already existing we emphasize in our model the role of empowerment,

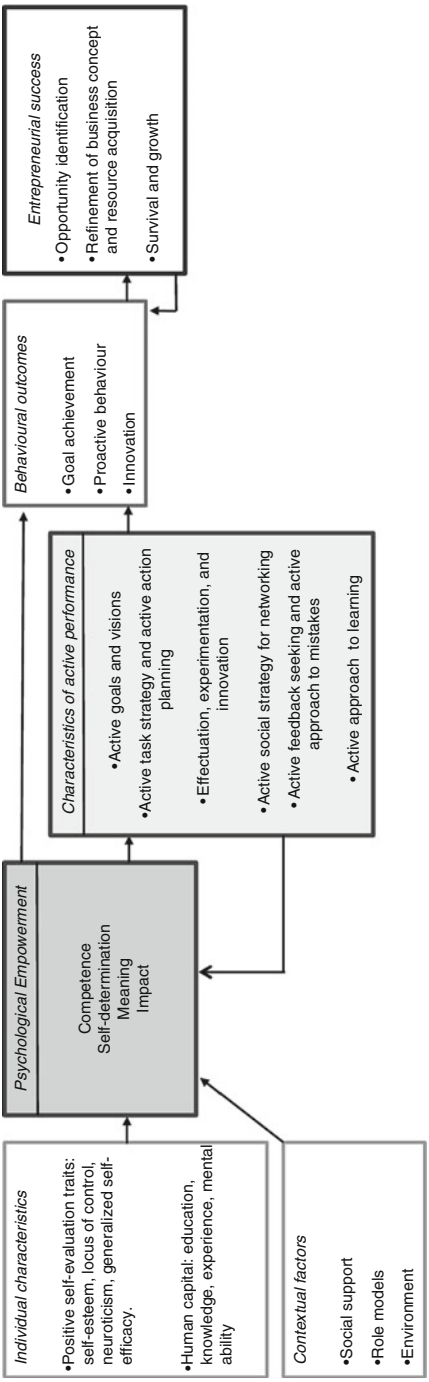

Fig. 3 Enpowerment in entrepreneurship

and its core dimensions, as a significant antecedent of behaviors leading to entrepreneurial success. Moreover, in this process, active performance may in turn strengthen empowerment promoting a positive spiral that will increase the probabilities of entrepreneurial success. According to this model, empowerment can be an effective way to promote entrepreneurial behaviors and outcomes.

7 Empowerment as a Way to Promote Entrepreneurship

Both socio-structural and psychological approaches to empowerment have focused primary attention on contextual factors as facilitators of empowerment (Seibert et al. 2011; Spreitzer 2008, 1996; Anna-Maija 2015). Based on research, we integrate contextual elements and suggest interventions that have potential to facilitate and promote empowerment and entrepreneurship.

Empowering Through Mentoring Transformational leaders (those who show consideration and inspire) generate more empowerment perceptions among their followers (Spreitzer 2008; Avolio et al. 2004). Extensive research provides consistent results in regards of the relationship between transformational leadership and empowerment (e.g., Fuller et al. 1999; Kark et al. 2003; Avolio et al. 2004). Mentors, as leaders, are usually experienced persons who train and counsel people into new work roles. Mentors who show consideration and inspire should also increase empowerment perceptions. Mentoring programs based on a trusting-supportive relationship (e.g., El Hallam and St-Jean 2016) can serve to enhance empowerment perceptions and in turn contribute to an active approach towards entrepreneurship. Based on the psychological empowerment theory (Spreitzer 1995; Seibert et al. 2011; Sun et al. 2012), mentors who encourage prospect entrepreneurs to set own goals and self-manage their tasks, who coach and inform, and who create practices that support empowerment (e.g., a supportive peer relationship) contribute to facilitate an active orientation towards work (i.e., psychological empowerment). Experienced entrepreneurs may help prospect entrepreneurs providing strategic information on how to get funding, giving feedback and guidance regarding goals, and serve to validate innovative ideas. Altogether, such elements should contribute to increase empowerment and, thus, predispose active action characteristics of entrepreneurship.

Empowerment in Entrepreneurship Training Entrepreneurship trainings encourage people to participate in the market by creating new businesses or improving existing ones. Such trainings provide basics skills and knowledge to succeed in entrepreneurship differing in content, length, and target groups (Bischoff et al. 2014). However, the results of entrepreneurship trainings are spurious. Even though some entrepreneurship trainings have proved to be effective (e.g., Gielnik et al. 2015; Glaub et al. 2014), the overall conclusiveness of their effectiveness cannot be totally asserted (Glaub and Frese 2011; McKenzie and Woodruff 2013). Regardless of the current effectiveness of such programs, we posit that such trainings can be

improved by introducing the socio-structural elements of empowerment that produce an active orientation towards work. In other words, without the elements that facilitate empowerment such programs would predictably fail in encouraging relevant components that facilitate an active approach to entrepreneurship (i.e., competence, self-determination, meaning, and impact), and therefore have lesser impact. Research shows positive results in the relationship between the different elements of socio-structural empowerment (e.g., social support) and the psychological experience of empowerment (Seibert et al. 2011, 2004; Neal 2014). According to the Job Characteristics theory (Hackman and Oldham 1980), and the psychological empowerment theory (Spreitzer 1995, 2008), a work environment design including elements such as extensive use of training, open information sharing, decentralization, participative decision-making, and contingent compensation serves to empower individuals. Previous research supports this hypothesis suggesting that the use of such practices does influence individual levels of psychological empowerment (Ai Noi and Youyan 2017) and generate consequent outcomes such increased task performance (e.g., Avolio et al. 2004; Seibert et al. 2004, 2011; Spreitzer 2008). In order to increase effectiveness, entrepreneurship trainings should include a participative work climate, promote wider control span (e.g., ownership and economic independence), establish performance-based feedback (e.g., assigning tasks, setting goals, or developing business plans), and offer contingent compensation at completion of the course (e.g., access to resources such computers or consultancy). In any case, such strategies should accompany training on specific entrepreneurial skills that evoke perceptions of psychological empowerment. For example, modules that include development of goals that are self-set, in relation to the participants' businesses (or ideas), should contribute to generate a sense of competence, self-determination, meaning, and impact. After the training, such programs should also provide access to further information (e.g., websites), foster inclusion and participation in the market (e.g., giving microcredits to high potential entrepreneurs), and strengthen social accountability and build organizational capacity (e.g. fomenting meetings or mentoring between participants), to facilitate active engagement in entrepreneurship.

8 Further Research

Further research should test the assumptions and relations between variables discussed along this chapter. A logical step to follow would be the generation of sound measurement instruments specifying indicators of competence, self-determination, meaning, and impact in entrepreneurship. The development of such instruments needs to take into account the distinctive features of empowerment in entrepreneurship (e.g., creating task-related indicators), their relational foundations (e.g., indicating predictive validity), and assure comparability across different settings and samples (e.g., testing hypotheses on entrepreneurs from different industries). Such measures should be suitable to assert direct impact and

ideally identify changes over time. Establishing a nomological network identifying antecedents and outcomes of empowerment in entrepreneurship can be useful for this purpose. Further research should also explore greater integration (or differentiation) between psychological empowerment theory and theories of proactive behavior in entrepreneurship. The strength of the theoretical relationships between psychological empowerment and various entrepreneurial attitudes and behaviors compares favorably with some of the most robust theories in the field of entrepreneurship (e.g., personal initiative theory, Frese and Fay 2001). A number of interesting questions arise. For example, does empowerment explain why or how some people manifest more personal initiative in entrepreneurship? Does empowerment mediate the relationship between personal initiative and entrepreneurial performance? Answer to such kind of questions would help to integrate similar theories of proactivity, and might extend and clarify the range of processes and outcomes to which different theories apply. Last, efforts aiming to clarify the directionality of the relationship between empowerment and entrepreneurship may entail a fertile direction for research. To date, we do not know much about the directionality of the relationship between both constructs. Although theory and research suggest mutual interaction between empowerment and entrepreneurship, longitudinal studies and dynamic analyses of their relationships are still needed to clarify issues regarding directionality and reciprocal effects.

9 Conclusion

This chapter links the components of psychological empowerment to characteristics of active performance in entrepreneurship. Based on the active, persistent, and change-oriented behaviors associated with psychological empowerment, we argued that empowerment might contribute to entrepreneurship. We took initial steps in drawing the rationale and identifying empirical evidence about the relationship between empowerment and entrepreneurial behavior. We hope such steps encourage further development of theory and research that advances groundwork of empowerment in entrepreneurship.

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Leadership Styles and Entrepreneurship

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Abstract This paper reviews the main leadership styles and analyzes their effect on entrepreneurship. They determine how the relationship of entrepreneurs with their work teams is key to achieving higher organizational performance. It also analyzes under what circumstances a particular leadership style may be more appropriate depending on the environment of each company. The leaders of an organization must commit to the digital transformation of the organization and, therefore, promote the improvement of its efficiency, effectiveness, sustainability and innovation.

Keywords Entrepreneurship • Leadership • Behavioral styles

1 Introduction

Leaders, by definition, are at the top of organizations and their actions often change the course of their organizations and, in some cases, that of entire societies (Judge et al. 2008). We can understand by leadership styles as the pattern of attitudes that leaders support and the behaviors they exhibit (Anderson and Sun 2015), or as defined by (Bass 1997) the form of leadership that a leader adopts towards their followers.

This chapter reviews and highlights the best-known and useful leadership styles for a business, from its origins to the present times of the digital economy, considering that different ages require different types of leadership (Firlej and Kluz 2016).

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1.1 Revision of the Literature

The first theory of leadership styles would be that of the "great man," a nineteenth-century popular belief that says leaders are born, not made. According to this theory, popularised by the Scottish writer Thomas Carlyle in the 1840s, leaders are born with leader characteristics within given social, political or economic circumstances (Kane 2015).

In the twentieth century a systematic approach to study leadership skills appeared, identifying specific features that could prompt someone to be an authentic leader. Those "traits" or characteristics were recognised by contrasting followers and leaders, and identifying the main factors of an effective leader (Kane 2015). In his analysis of more than 100 leadership studies, Stogdill (1948) identified five factors that influence leadership success: capacity, responsibility, achievement, participation and position or status.

The work of Ohio State Studies, started in 1945 and continued through the 1950s, represented a turning point in the investigation of leadership behaviors (Stogdill and Coons 1957).

1.2 Lewin's Leadership Styles

In 1939, psychologist Kurt Lewin conducted a study (Lewin et al. 1939) that identified three main leadership styles and the effect each style had on team members under that leadership:

1. Autocratic leaders, who make decisions without consulting team members, although their opinion might be useful. It is a style that could be appropriate when it comes to making decisions quickly and there is no need for input from the team.
2. Democratic leaders, who make decisions in the end but include team members in the decision-making process. This leadership style encourages creativity, and team members are often very committed to projects and decisions. As a result, team members tend to have high job satisfaction and high productivity.
3. Laissez-faire leaders provide to their team members much autonomy in how to do their tasks, make their own decisions and set their own goals. These leaders help with means and guidance if needed, but they tend not to get involved. This freedom could mean high job satisfaction, but also could be detrimental if followers do not administer their time properly or do not have the knowledge, skills or self-motivation to do their job effectively.

1.3 The Likert Management System

The Rensis Likert management system (Likert 1961) puts forward four categories of leadership styles:

1. The exploitative-authoritative. This type of leadership is exemplified by the leader who has little confidence in their subordinates, and therefore makes all the decisions for the group. In this case, the team is driven by fears and pressure.
2. The benevolent-authoritative. In this type of leadership the confidence in subordinates is low. Leaders make decisions without the team and use some kind of reward to stimulate their followers.
3. The consultative-advisory leader has a higher level of confidence in their followers and, therefore, asks for their help when deciding.
4. Participatory leader. This type of leadership shows a high grade of confidence in their followers and motivation is based on achievement. The whole organization is responsible for success or failure.

1.4 The Blake-Mouton Managerial Grid

The Blake-Mouton managerial grid model (Blake and Mouton 1964) highlights the most appropriate style of leadership based on two behavioral dimensions:

- Concern for results: This is the degree to which a leader emphasizes concrete goals, organizational efficiency and high productivity in deciding the best way to accomplish a task. In a task-oriented leadership style the focus is on doing the job. The leader defines the work and roles required, puts the structures in place, as well as plans, organizes and monitors the work.
- Concern for people: This is the extent to which a leader considers the needs, interests, and personal development areas of team members when deciding the best way to accomplish a task. With a people-oriented leadership style the focus is on the organization, support and development of team members. This participatory style encourages good teamwork and creative collaboration.

Based on these two dimensions of behavior the Blake and Mouton (1978) model establishes five leadership styles:

1. The impoverished management style—Low level of concern for results/low level of concern for the team. This leadership style (also called "indifferent" leadership) is fundamentally unsuccessful because it brings disorganization and disagreement. It shows no interest for creating systems that should facilitate finishing the job, neither does it create a satisfactory team environment.
2. The "Produce or perish" Style (also known as "authoritarian" or "obedient-to-authority" managers)—High concern for results/low concern for team. Leaders consider that their followers are just an instrument to an end. The needs of the followers are subordinated to its productivity. This kind of leader is autocratic,

has severe working rules, policies and procedures and may even consider sanction as a means to motivate followers.
3. The "Middle-of-the-Road" Style—Average concern for results/Average concern for the team. A "middle-of-the-road" or "status quo" manager tries to balance results and people, but this strategy is not as effective as it may sound. Through continuous commitment, the leader does not inspire high performance and does not fully meet people's needs either.
4. The "Country-Club" Style (also known as "complacent" leadership style)—High concern for the team/Low concern for results. In this style the leader is fundamentally worried about his/her people requirements and feelings. The manager believes that if the people are pleased and confident, they will perform successfully, which lean towards a very relaxed and fun work environment, but where productivity suffers due to lack of direction and control.
5. The Team-Management Style—High concern for production/High concern for the team. It shows a leader who is passionate about his/her work and who does the best he/she can for the people he/she works with. It is a leader who is committed to the goals and mission of the organization, who inspires productive people and works hard to make people strive for great results. This leader is a stimulating figure who takes care of their teams, which creates an environment based on trust and respect, and leads to high satisfaction, motivation and excellent results.

1.5 Hersey-Blanchard Situational Leadership

Based on the work of Hersey and Blanchard (1969), the situational leadership theory suggested that leadership styles depend on the environment or "situation" in which a leader needs to act and should change when the situation and the needs of subordinates change. The essence (Blanchard et al. 1993) is that there are two dimensions that concur in order to change the leader's behavior:

- Supportive behavior. It refers to showing socio-emotional concern for subordinates
- Managerial behavior. Meaning that leaders need to delegate everyday jobs and watch over followers.

According to Hersey and Blanchard (1982), both behaviors need to be modulated as a function of the aptitudes and maturity of the followers. If the followers are experienced and reliable, the leader will only provide motivation and socio-emotional care, and there will not be necessary to dictate behaviors or give directives. Nevertheless, for followers who could be insecure or immature, support behaviors and directives will be more necessary until they boost practice and knowledge.

1.6 The Path-Goal Theory

Inspired by the work of Georgopoulous et al. (1957) and later by Evans (1970), House (1971) developed the path-goal theory and then redefined and updated it in an article in 1996 (House 1996). According to this theory, the best leadership approach can be identified, which is based on the needs of the team, the task they are doing and the environment in which they are working. If the leader wants his or her team to reach their goals, he or she needs to help, support, and motivate them. This can be done in three ways:

- Help them to identify and achieve their goals.
- Eliminate obstacles, thus improving performance.
- Provide appropriate rewards along the way.

Four different leadership styles can be used in this case:

1. Supportive Leadership—when the leader focuses on relationships, shows sensitivity to the individual needs of team members and considers their interests. This style of leadership is best when tasks are repetitive or stressful.
2. Directive Leadership—when the leader communicates objectives and assigns well-defined tasks. This leadership style suites best when jobs are unstructured, or when tasks are complicated and followers are inexpert.
3. Participative leadership—In this style, the leader focuses on mutual participation, trusts the team and considers their ideas and opinions before deciding. This style suites best when followers have experience, when the jobs are difficult, and when followers want to express their opinion.
4. Achievement-Oriented Leadership—The leader sets stimulating and inspiring goals and objectives for the followers and trusts their skills, which is why he/she expects them all to work well and maintain high standards. This style works best when team members are unmotivated or unchallenged in their work.

1.7 The Six Emotional Leadership Styles

Daniel Goleman, Richard Boyatzis and Annie McKee described six different styles of emotional leadership in their book "Primal Leadership" (Goleman et al. 2002): Visionary, Coaching, Affiliative, Democratic, Pacesetting and Commanding. These six styles should be used depending on the specific needs of the situation and the people the leader is dealing with (Goleman et al. 2002):

1. Commanding: This leader tries to make the team fulfill orders immediately with concrete and precise instructions.
2. Visionary: This style of charismatic leadership seeks to mobilize people through the leader´s vision, making them see what their role will be within it. The visionary leader has a clear picture of where to go and tries to get the team to share this same way of looking at the future.

3. Affiliative: It is based on building emotional bonds in the group, thus enhancing harmony among its members to create a pleasant work environment. This style gives great relevance to the people, to the detriment of the tasks and organizational objectives.
4. Democratic: It is based on the idea that decisions must be taken jointly among all members of the team. Therefore, people who follow this leadership style tend to frequently meet with all team members.
5. Pacesetting: It is based on the idea of using oneself as an example to direct people. The leader sets high standards of performance and challenges, but he or she wants things done in his or her own way.
6. Coaching: The leader seeks the professional development of the team members. He or she helps them identify their strengths and weaknesses and sets long-term goals in their careers and also provides feedback and guidance on their professional performance.

1.8 Randle's Leadership Matrix

The Flamholtz and Randle Matrix of Leadership Styles (Flamholtz and Randle 2007) shows the best style (containing from "autocratic/benevolently autocratic" to "consensus/laissez-faire") based on people's ability to work autonomously and on how creative or mechanical an individual has to be able in order to finalize his tasks. The vertical axis represent the "programming" of the task (from tasks with specific steps or instructions to the creative ones where it is up to the person to decide the best way to complete it). The horizontal axis represents the individual's aptitude and predilection for self-government (considering his/her education, skills, motivation and desire for feedback, collaboration or freedom). For instance, a professional with a high level of instruction, skills, motivation and individuality is expected to want autonomy. On the other hand, someone with low enthusiasm and poor abilities will desire and need more feedback and interaction from the leader to finish his/her tasks correctly.

1.9 Transformational Leadership

The book "Leadership" (Burns 1978) written by leadership authority James McGregor Burns presented the model of transformational leadership. He defined this new concept as a process where "leaders and their followers raise one another to higher levels of morality and motivation". One decade later, Bernard M. Bass defined the concept of transformational leadership. Concerning his book (Bass 1985), this type of leadership style is a model of integrity, establishes clear goals and objectives, generates high expectations, motivates the team, offers support and

recognition to the people, stirs people's emotions, makes followers look beyond their self-interest, inspires followers to achieve the unlikely.

Transformational leadership "increases awareness of collective interest among members of the organization and helps them achieve their collective goals" (Waddell and Pio 2015). Transformational leaders inspire team members because they expect the best from each of them and feel responsible for their actions. Also, this type of leader provides information, advice, support and encouragement to workers, increasing their motivation and optimizing their performance (Bass 1997). Wang et al. (2011) found that transformational leadership was strongly related to job satisfaction among followers, satisfaction with the leader, motivation, commitment to organization and effort, three types of job performance (task, contextual and creative) and even group and organizational performance.

According to these authors (Bass and Avolio 1997; Bass and Riggio 2006), the transformational components are:

- *Idealized influence or charisma*. It is the degree to which the leader behaves admirably, in a way that causes followers to identify themselves with that leader (Judge et al. 2004). Leaders of this type are described as charismatic and are perceived by followers as possessing a high degree of morality, trust, and integrity. They show conviction, emphasize trust, position themselves on difficult issues and emphasize the importance of purpose, commitment and ethical consequences of decisions. These leaders are admired as role models generating pride, loyalty, trust and alliance around a common purpose.
- *Inspirational Motivation*. It is the degree to which the leader articulates that vision that is attractive and inspiring to the followers and challenges them with high standards, transmits optimism about achieving goals and lends meaning to daily tasks (Judge et al. 2004). These leaders have the ability to motivate their employees to make them rethink how to solve problems, encouraging them to be innovative and creative.
- *Intellectual stimulation*. It is the degree to which the leader questions assumptions, takes risks, asks for ideas from the followers, and encourages creativity in the followers (Judge et al. 2004). These are leaders who question old assumptions, traditions and beliefs, inspire new perspectives and ways of doing things, and encourage the expression of ideas. If a collaborator is wrong, they will not be punished by making the issue public, but are encouraged to contribute ideas even if these ideas do not agree with those of their responsible.
- *Individualized Consideration:* The degree to which the leader meets the needs of each follower, acts as their mentor or coach, and listens to their concerns and needs (Judge et al. 2004). They are leaders who consider individual needs, abilities, and aspirations, promote a two-way communication with their collaborators, not just a mere transmission of information, which is why they are considered as people who listen.

1.10 Transactional Leadership

The transactional leadership style "focuses on promoting the individual interests of leaders and their followers by setting goals, following up and controlling outcomes" (Waddell and Pio 2015). This style is born assuming that the followers will obey their leader since they have taken that job. The company pays the employees in exchange for their endeavor and completion of a short-term task (Spahr 2014).

This leadership style, in some situations, implies some benefits, such as clarifying the roles and responsibilities of all members. Besides, since transactional leadership judges team members in terms of performance, people who are ambitious or motivated by external rewards—including financial compensation—often thrive under this leadership style. The disadvantage of transactional leadership style is that it could be considered disturbing and amoral in itself. It is difficult for team members to improve their job satisfaction and this style even promote a certain staff turnover. Moreover, it is not recommended for knowledge-based or creative work at all.

On the other hand, the characteristics of transactional leadership lie in the establishment of unpredictable reinforcements and action at times of divergence with the organization's plans (Bass 1997). These leaders monitor the activities of their subordinates to avoid errors and deviations from established procedures and standards (Bass and Riggio 2006).

Since leaders can present behavioral patterns that combine elements of different leadership styles, Bass and Avolio (1997) propose the Full Range Leadership (FRL) model that includes the components of both types of leadership to form a whole, whose results should be the satisfaction of the needs of the individuals and the group, the extra effort required for the attainment of the shared objectives, and the efficiency and effectiveness of the organization.

1.11 Other Leadership Styles

Servant leadership is a style that focuses on the thriving of those who are being led and at the same time served by the leader (Stone et al. 2004). Servant leaders start from the natural sense of service first, to ensure that the priority needs of others are addressed first rather than their own (Greenleaf 1970). A "service leader" leads just focusing on the needs of his/her team. He/she leads by example with generosity, and has high integrity. This style facilitates a positive corporate culture, and may achieve a high motivation between team members (Greenleaf 1977).

Other leadership styles can be mentioned according to Anderson and Sun (2015), such as:

Ideological leadership developed as a separate style in the historiometric analysis of (Strange and Mumford (2002) on 60 historical leaders. While the vision of the charismatic leader, with whom the ideological leader has so much in common,

is forward-looking and emphasizes the social needs and changes that are needed to produce a desired future, the vision of the ideological leader emphasizes "personal values, standards that must be maintained and the derivation of meaning through adherence to these standards" (Strange and Mumford 2002).

Pragmatic leadership is characterized by the awareness of the practical and everyday difficulties that individuals and companies have to deal with, and by its focus on designing and selecting cost-effective solutions. The pragmatic leadership style tries to motivate others by appealing to their own profit and demonstrating that the planned solutions will achieve shared objectives (Anderson and Sun 2015). This style of pragmatic leadership requires a deep understanding of the social network of the parties interested in the problems, on the one hand, and the economic and technical issues associated with these problems and their solutions, on the other hand.

Authentic leadership has received considerable attention and research support over the last decade (Wang et al. 2014). Authentic leadership is a behavior pattern of the leader based on promoting psychological capacities and a positive ethical climate, encouraging greater self-awareness, an internalized moral perspective, the balanced processing of information, and relational transparency in the way in which the leader works with their followers, "thus fostering positive self-development" (Walumbwa et al. 2008). Four dimensions can be established: Self-awareness, Relational transparency, Balanced processing, and Internalized moral perspective.

The Ethical leadership style is "the evidence that shows the leader of normatively appropriate behavior at personal actions and also at interpersonal relationships, influencing to followers with such a behavior" (Brown and Treviño 2006). Basically, an ethical leader is a moral person (a person who considers themselves to be just, honest, trustworthy and a decision-making person), a model of moral behavior (who practices what he or she preaches and is seen as an attractive role model); and a moral manager (who considers ethics as an explicit part of his or her leadership agenda and uses rewards to make followers responsible for ethical behavior).

2 Conclusions

The current digital era is marked by several key structural changes that are reshaping leadership (Firlej and Kluz 2016) such as a fast and deep technological change; a dynamic spread of information due to globalization; a change from a physical world to a world of knowledge and finally a more spread and less hierarchical organizational structures. The leaders of any organization must commit to its digital transformation and thus promote the improvement of its efficiency, effectiveness, sustainability and innovation. In this sense, its leadership style should be less traditional, more conversational, open and collaborative (Demirkan et al. 2016). Not only do the best leaders have a strategy to go digital, but they share it with employees throughout the organization. They have digital skills and the ability

to learn new digital skills fast. They make decisions quickly, without bureaucratic bottlenecks. They emphasize diversity and listen to younger executives in order to find alternatives to the digital transformation of their organizations (Gregory 2016). Leadership must be guided by an attitude of openness and a genuine hunger for knowledge, capable of understanding the impact of disruptive technologies. Leaders need to know their limits and how to acquire the knowledge they lack. A leader of the future looks more like a community manager than an authoritarian manager (Firlej and Kluz 2016).

Digital leadership can be defined by the leader's contribution to the transition towards a knowledge society and their mastery of technology (Firlej and Kluz 2016). When e-Leadership (leadership with "e" as in "electronic") is referred to, it is the leadership in the new age, which is characterized by the rapid development of technology, a global economy where businesses constantly move across borders to wherever they can make a profit (Wang and Torrisi-Steele 2016). E-leadership is necessary to solve many of the problems created by the information age.

Leaders should use Information Technology to understand and inform their stakeholders about the changes that are occurring in their business environment in order to reduce geographic gaps and to make their future sustainable with positive growth rates (Vutukuru and Mohan 2016). Leaders have an obligation to keep up with the current global revolution. They must understand technology, not only because of its enabling capacity, but also because of its revolutionary power (Firlej and Kluz 2016).

For all these reasons, there is a certain academic consensus that the best leadership style that can deal with the current world where the digital revolution is at its peak is the transformational style (Cockburn and Smith 2016). In addition, the transformational leadership style is very focused on adopting rapid changes, whether in technology or in society (Vutukuru and Mohan 2016) and, today more than ever, this is a critical issue.

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Co-operation and Conflict in International Entrepreneurs When Cultures Collide

Ursula F. Ott

Abstract This chapter introduces the framework of culturally-rooted 'co-operative cheating' for international entrepreneurship which provides different degrees of hierarchy and group behavior in individualistic entrepreneurship and group-centered loyalty. International entrepreneurs are exposed to different cultural behavior and workplace cheating. The typologies of co-operative cheating are used to understand the clashes of cultures and how avoid conflicts by offering incentives to co-operate and to divert culturally-rooted cheating.

Keywords Co-opetition • Entrepreneurship • Cultural behavior

1 Introduction

This chapter considers the occurrence of cooperative and cheating behavior on the international stage and the design of incentives to encourage a better understanding between different cultural schemes. In a globalized world, working together with people of different cultural backgrounds is a very common situation. The focus of this chapter is on international entrepreneurship behavior in a cross-cultural context. Market and technology access of multinational enterprises (MNE) has generated collaborations between different cultures and company types. The expertise of local entrepreneurs dealing with subsidiary relationships of MNEs emphasizes the complexities of cultures co-operating and cheating in a work context and offer an opportunity to analyze cultural patterns of behavior. Transferring cheating from the social group context to the work place as an outlet of groups of the society, Challinger (1995) illustrates the very worst cases of workplace crime by reporting killings in factories by disgruntled workers in China and the USA. The author points out that the events suggest that there are no cultural impediments to workplace deviance and that it even indicates workplace crime is a global problem. He identifies workplace crime as comprising offences that cause loss to an employer. Immediate losses are obvious but there are also some other associated and indirect

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costs such as reduced profits, increased insurance premium, higher costs for additional security and internal control, decreased employee activity, lowered morale, decreased service quality and damage to company image. Furthermore, the losses for government and public were listed and it seems that it is important to analyze culturally-rooted cheating behavior. The research question in this context is: *How are cross-cultural characteristics of cooperation and conflict influencing international collaborations of entrepreneurs and other company forms?*

The results of a cultural anthropological approach leads to the conceptualizing of the factors contributing to co-operative cheating with four archetypes to incentivize co-operative behavior and avoid culturally rooted mishaps in cross-border transactions. The model works in both directions for industrialized and emerging countries. Firstly, we use a two dimensional way of 'hierarchy-group' in combination with power distance and individualism Ott (2006) to come up with a continuum 'hierarchy-equality' and 'individualism-group'. This is the conceptual background to develop archetypes of co-operative cheating in relation to the country clusters and hierarchy/group analysis. Finally, we consider that some cultures have an incentive to cheat due to their social and cultural background and therefore offer incentives to encourage a co-operative mechanism for international collaboration of entrepreneurs.

2 Theoretical Background

2.1 Culture and Corruption

On the international stage, traditions and common ways of thinking can be viewed as an invisible set of a cognitive program rooted in the common national culture. As Denison and Mishra (1995) emphasize that social scientists over a 50 year period (Weber 1930; Mead 1934; Radcliffe-Brown 1952; Pettigrew 1979; Trice and Beyer 1984; D'Andrade 1987) viewed culture as a system of socially transmitted behavior patterns which serves to relate human communities to their ecological settings. Pettigrew (1979) considers that the elements of culture are "in varying degrees interdependent, and there is convergence in the way they relate to the functional problems of integration, control and commitment" (p. 576).

Theoretically, Toh and DeNisi (2003) point out that cultures have similar concerns for justice, but the meaning of the term may differ and found evidence that in feminine and collectivist cultures, justice is served when moral duties and interpersonal responsibilities are met. Rewards such as recognition, status and social support are more important than pay. Chen et al. (1998) propose a cultural model of co-operation. They find patterned differences in the instrumental and expressive motives of individualists and collectivists and offer six culturally contrasting cooperation mechanisms. There is this tension between cooperation and conflict which arises in many social situations and we can add the perspective

of Denison and Mishra (1995) who focus on culture as a critical aspect of the adaptation of social organizations.

There is an underlying problem of conflict, cheating, and corruption occurring in international ventures. The motives, attitudes and values behind the different cultures when it comes to cheating are diverse. Corruption as a particular form and important issue for international entrepreneurship and needs to be investigated from a cultural perspective in order to understand ways of dealing and circumventing related problems.

Husted (1999), Habib and Zurawicki (2002) and Park (2003) consider cheating in connection with corruption and culture as well as the Hofstede dimensions. If a corrupt country is made of high masculinity and power distance, then research for a country where cheating at the work place is prominent should be as well be using these dimensions and additionally individualism as a reference for personal or collective achievement. Especially, individualism Chen et al. (1998) and Toh and DeNisi (2003) can be relevant for cheating, as the continuum of individualism-collectivism can be strongly related to group behavior and loyalty. Using Hofstede's dimensions, Barkema and Vermeulen (1997) emphasize the importance of power distance, individualism and masculinity, emphasizing clusters of countries which have a similar hierarchical and group behavior structure (Individualism/Masculinity). Getz and Volkema (2001) and Park (2003) investigate the cultural indices of power distance, individualism, masculinity and uncertainty avoidance in the context of corruption as a form conflictual behavior in international settings. If we assume that cheating is as global as co-operating, then individualistic societies would be encouraged to cheat for their own benefit in order to get promoted or obtain personal perks. Whereas, members of collectivist societies cheat in order to support the group, to help the group as such to flourish and to improve the situation of one group compared to another.

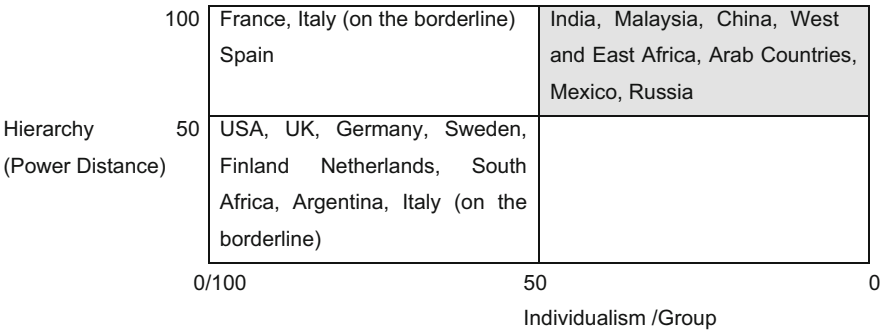
To develop the 'individualist-collectivist' perspective further, an additional criterion 'masculinity/femininity' as another feature of group behavior and the dimension of 'power distance' can be added to understand a cultural context 'group behavior—hierarchy' in order to come up with a two dimensional tool for analysis. This links the grid/group analysis Douglas (1970), Mars (1994) and Ott (2006) and our model enlarges therefore to a cultural model of co-operative cheating. The model uses incentives as a mechanism for cooperation (Chen et al. 1998; Ferrin and Dirks 2003; Bottom et al. 2006).

2.2 The Concept of Global Hierarchy/Group

The starting point of cultural analysis and the comparison of behavioral patterns is in the 70s, when Douglas (1970) introduced Grid/Group classifications. This was followed by Natural Symbols (1970), in which Douglas emphasized classification in two dimensions Group (meaning a general boundary around a community) shows the horizontal axis and Grid (regulation) on the vertical axis. The *Group* dimension

measures how much of people's lives are controlled by the group they live in. An individual needs to accept constraints on his/her behavior by the mere fact of belonging to a group. For a group to continue to exist there will be some collective pressure to signal loyalty. *Grid* gives the measure of structure. According to Douglas (1970), some peoples live in a social environment where they are free of group pressure and of structural constraints. Important for our research therefore is, that moving along from zero where everything has to be negotiated ad hoc, moving along to more comprehensive regulation the groups are likely to be more hierarchical. Culture Theory assumes now that four types of cultural bias are present in any collectivity. Each is based on a type of stable organization that could not endure if the cultural underpinnings were eroded. Davy (1997) shows the analysis of irreconcilable conflict based on the types of group/grid.

Douglas's framework of grid/group was used by Mars (1994) to enlarge it to the workplace, by Hendry (1999) to show the conflict of market and hierarchy, by Altman and Baruch (1999) to compare organizations, organizing and change and by Ott (2006) to show the relationship between the grid and group in terms of cheating. The latter framework uses a classification of cheating in a global workplace which combines Hofstede's cultural dimensions (1983, 1985), Mars (1994) group/grid cheating and. Hennart's (1993) cheating and shirking costs to all of these categories. Ott (2006) comes up with the assumption that cheating could occur in all societies and the nature of the workplace encourages this behavior. Mars (1994) and Ott (2006), both, made the mistake to have the column with individualistic and isolated behavior as a sign of lower group levels on the high end of group behavior and mixing up the continuum. Thus, this chapter is now going back to Douglas's original values and shows individualistic/isolated behavior as a low degree of group behavior. Hofstede's indices position the values between 0 and 100 are used and transferred them in a [0,1] frame (Ott 2006). In Fig. 1, Hofstede's indices (1983, 1985, 2001) result in an interesting pattern of Western cultures being clustered in the part where low power distance and high individualism are present. Asian, African, Latin-American and Arab countries are combined in a hierarchical



Source: Adaptation of Ott (2006)

Fig. 1 Hierarchy and group behavior

Fig. 2 Corruption and group

collectivist cluster. France, Spain and Italy can be considered as Latin European cultures with a hierarchical structure yet an individualistic approach. Interestingly, the cell which is considered for low power distance and collectivist cultures does not have many members in it—as this can be seen as a very genuine co-operative, egalitarian culture.

Using Husted (1999) outcome that high power distant and low individualist countries have the crucial dimension masculinity to show the propensity to corruption, the countries in the grey zone of Fig. 2 are those which are falling into this description. The diagram below clearly points out the connection between the individualism score and the corruption index, similarly to power distance and individualism.

Though there is a clear cut into Western industrialized countries and Asian, African, Arab and Latin American countries, the hierarchy and group behavior dimensions in the combination power distance. In order to come up with consistent results the individualism and power distance scores relate to the corruption index. Furthermore, the joint sets of individualism, masculinity and power distance as grid-group, are reflected in Fig. 3 which is a summary of the configurational approach used for classifying the group-grid Douglas (1970) and Ott (2006) and corruption relationship in the joint sets of fuzzy set Qualitative Comparative Analysis (fsQCA) (Ragin 2000, 2008; Rihoux and Ragin 2009; Roig-Tierno et al. 2017). The set-theoretic analysis of the conditions leading to cheating comprised a new tool to classify cases with similar features. It shows the consistency and coverage of these cases of national cultures. This approach moves beyond the description of the cultural dimensions in connection with corruption, but positions the asymmetric relationship of the joint sets of the national cultures mentioned above. The configurational approach in Fig. 3 reflects what has been highlighted about corruption being a function of power distance, individualism and masculinity.

The framework of cultural patterns of cheating and co-operating needs a link between the works of Mars (1994), Hofstede (1983, 1985) and Ott (2006) and this is the focus on the four types of cheating in an international workplace based on

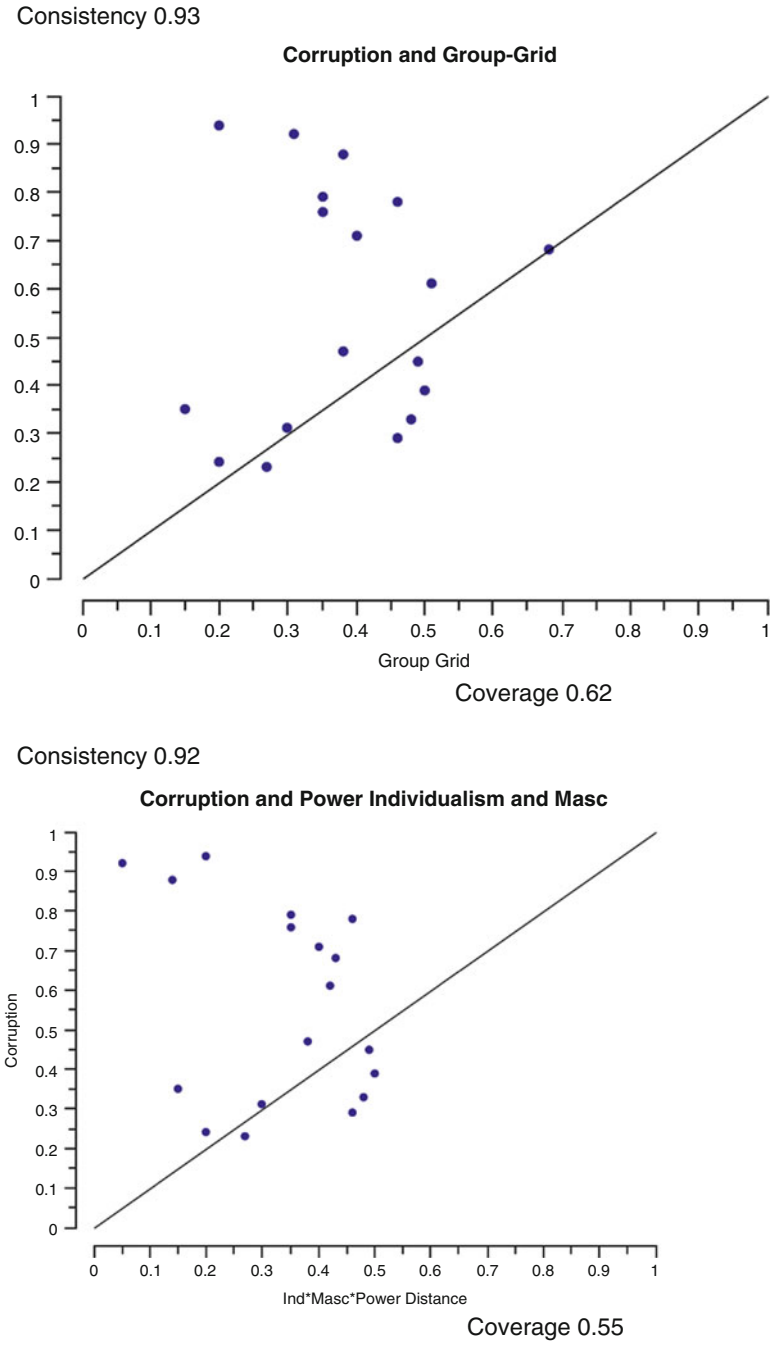


Fig. 3 Corruption and group-grid as a joint set of cultural profiles as asymmetric relationships

Step 1: Douglas's Grid/Group Diagram – in the 1970s

Grid

Isolate	Positional
Individualist	Enclave

0 Group

Step 2: International patterns of co-operating and cheating – Globalization

Hierarchy (Power Distance)

Isolated Subordination e.g. Japan, Italy,	**Group-Centered Loyalty** e.g. China, Malaysia, East and West African countries, Russia
Individualist Entrepreneurship e.g. USA, UK, Germany	**Consensus-Sensitive Equality** e.g. Sweden, Finland, Netherland

0 Individualist/Masculine Group (Collectivist/Feminist)

Fig. 4 The evolution of co-operative cheating archetypes

different degrees of hierarchy and group behavior. Our next step is to use the findings of the literature review and analyze the relationship between Hofstede's dimensions and the transparency indices of corruption and bribe. With these results, we will be able to revisit earlier work on the grid/group concepts. Figure 4 highlights the four archetypes developed as *individualistic entrepreneurship, isolated subordination, group-centered loyalty and consensus-sensitive equality/loyalty*.

This multidisciplinary approach is based on cultural anthropology and economics towards developing a cultural theory of co-operative cheating. Incentive theory provides a suitable lens for the analysis of these problems and is used to design contracts to induce truthful revelation of hidden information Waller (1988), Chow et al. (1999), Rankin and Sayre (2000) and Soriano (2005) about cultural co-operative capabilities.

3 Incentive Theoretic Model for International Entrepreneurship Behavior

Jansen et al. (2009) and Kunz and Pfaff (2002) show the relevance of combining agency theory with culture and motivation. Rankin and Sayre (2000) suggest that more research is needed focusing on behavior, evaluation, and compensation in

multi-agent environments. This chapter therefore uses a combined approach of cultural behavior and incentive theory for international entrepreneurship behavior.

The analysis of cultural cheating has so far shown the conceptual approach towards hierarchy, group and cheating to describe and analyze the culturally-rooted cheating behavior. Prescribing a collaborative approach towards conflict should generate new insights into the applicability of incentive theory to real-life international relationships. In order to generate results in a model of cultural cheating and co-operating, the relationship between hierarchy (power distance) and achievements (individualism) as well as hierarchy and relationships (masculinity) will be analyzed in the context of an international workplace. The emphasis is on HQ and subsidiary misunderstandings based on the acceptability of corruption in some countries and the prosecution in others. Culturally sensitive behavior would be able to eliminate clashes and misunderstandings.

Propositions are important to show the connection between the configuration of culture and its form of cheating. These propositions are connected to the types of cheating in a group context: It shows the closeness and the distance between hierarchical structure and caring for consensus in the group. Co-operating can be a natural way in a more egalitarian and nurturing society and cheating can be part of strengthening the ties within the group and mark boundaries to the outside world. In a more entrepreneurial sense, cultures with higher masculinity will need more incentives in order to achieve the aim of cultural co-operation. We will therefore show these propositions in the respective sections of the cultural types of cheating. The next section links effort levels to Hofstede's indices and we can finally develop incentive schemes based on the propositions and effort levels.

3.1 Cheating and Efforts to Co-operate Culturally

Ott (2006) considers Hofstede's dimensions to show the distance between the groups and the related higher or lower effort to bridge the gaps. Thus, a high effort is for much more distant cultures and a lower effort for close cultural groups and the disutility of effort stands for higher costs of culture.

Let us now have the effort levels $q(e)$ or a disutility of effort $v(e)$ related to the cultural dimensions. For MNE headquarter and subsidiary relationships, we take the *Power Distance* index as hierarchical structure and connect culturally-rooted co-operative efforts in the range [0;1] and the same for *Individualism*/*Collectivism* index. We can therefore show the following culturally-rooted co-operative efforts $e_{CC} = (e_{HPD}, e_{LPD})$ and $e_{CC} = (e_{Ind}, e_{Coll})$. Table 1 shows the relationship between the efforts for cultural co-operation regarding the hierarchy and the group behavior in MNEs. Higher efforts to bridge cultural differences when it comes to very hierarchical societies and very individualist societies need to be rewarded. We assume that people from societies with flat hierarchies and more collectivist attitudes will have mechanisms in place to encourage co-operation per se.

Table 1 Effort levels based on power distance and individualism

	Personal Achievement, (Individualism,) e_{Ind}	Collective Achievement, (Collectivism) e_{Coll}
Hierarchy and Rules (High Power Distance) e_{HPD}	**Isolated Subordination** Effort levels for co-operation: e_{HPD}, e_{Ind}	**Group-Centered Loyalty** Effort levels for co-operation: e_{HPD}, e_{Coll}
Equality and Risk Taking (Low Power Distance) e_{LPD}	**Individualist Entrepreneurship** Effort levels for co-operation: e_{LPD}, e_{Ind}	**Consensus-Sensitive Equality** Effort levels for co-operation: e_{LPD}, e_{Coll}

Relevant in international entrepreneurship behavior are the types 2 *Group-Centered Loyalty* for family cultures and type 4 *Individualistic Entrepreneurship* which will be in the following analyzed and positioned for international collaborations as the most conflictual when they come together.

3.2 Group-Centered Loyalty

Propositions: If employees of the subsidiary workforce have a national culture which has a high power distance and low individualism score, then it is possible that cheating occurs due to high group pressure and loyalty.

Let there be incentive schemes designed which are linear contracts and consist of R as fixed part or salary and royalties r_{GB} as parameters. We can therefore make royalties dependent on effort levels for high power distance, initialized as HPD, and effort levels for low individualism, initialized as COLL for collectivism. The incentive schemes can be written as follows: $I = R + r_{GB}(e_{HPD}, e_{Coll})$. The principal's payoff function maximizes the value function V(q) minus the incentives paid to the agent and the agent's payoff consist of the incentive payments reduced by the disutility of effort or the costs of co-operation.

Cheating occurs to break hierarchical structure and emphasize the group Mars (1994). There will be a strong group code with top-down management and work culture cheating will occur due to the encouragement to be successful as a group—tribal rivalries and in-group collectivism are present. In this group, group benefits

are better incentives to encourage co-operation than financial rewards and promotion, since the welfare of the group is at the center of interest for the members of this work group. Family cultures and tribal cultures (see Figs. 1 and 2) are examples for this type. Shall we see cheating as a type of behavior conducted within the group, or is it depicted towards out-group members only? Even though financial rewards and bonuses can also be tied to group-performance and distributed to the whole group, the nature of the reward (i.e., financial vs. non-financial) is more decisive than the allocation rule (i.e., individual vs. group based) in this case.

3.3 Individualist Entrepreneurship

The *Individualist Entrepreneurship* is relevant in MNE relationships with entrepreneurs in technology intensive settings where SMEs and entrepreneurs are part of a subsidiary system. The clash between Western societies with Middle and Far Eastern societies shows the challenge in understanding cheating and free-riding behavior in cross-border settings. A purely Western perspective does not adjust to the complexities of relationships. Thus, the following type brings the market mechanism into the analysis.

Propositions: If the cultural behavior has a low power distance and high individualism score, then it is possible that the personal achievement is more important and enables the members of the society to move up in the hierarchy and an entrepreneurial spirit is triggering performance. Incentive schemes offered adjust to effort levels and reward motivations.

Let there be incentive schemes designed which are linear contracts and consist of R as fixed part or salary and royalties r_B as parameters. We can therefore make royalties dependent on effort levels for low power distance, initialized as LPD, and effort levels for high individualism, initialized as IND. The incentive schemes can be written as follows: $I = F + r_B(e_{LPD}, e_{Ind})$. The principal's payoff function maximizes the value function V(q) minus the incentives paid to the agent and the agent's payoff consist of the incentive payments reduced by the disutility of effort or the costs of co-operation.

There is a sense of freedom due to low power distance and an entrepreneur is free to perform for their own good. The difficulty in MNEs occurs due to the individualist non-co-operative spirit. The capitalist way of thinking will have cheating in market terms (see Hennart 1993). The incentives for this group need to be targeted towards the individualistic nature and the possibility of promotion, if culturally co-operative behavior is established. Thus, the importance of rewarding and encouraging a high effort level of bridging cultural gaps needs to be considered.

Based on the game theoretical applications in information economics and contract theory Macho-Stadler and Perez-Castrillo (1997) and Martimort (1996) incentive contracts reflect the clash between the two types of cultural behavior of international entrepreneurship. The focus is on the effort level and the cultural

Table 2 Incentives for cooperation between individualistic and group-centred loyal entrepreneurs

		Local Player	
		Individualist Entrepreneurship $I = F + r_B(e_{LPD}, e_{Ind})$	**Group-Centred Loyalty** $I = R + r_{GB}(e_{HPD}, e_{Coll})$
Foreign Player	**Individualist Entrepreneurship** $I = F + r_B(e_{LPD}, e_{Ind})$	$I = F + r_B(e_{LPD}, e_{Ind})$ **Entrepreneurs – cheating in market mechanism (price and profits)**	$I = F + r_B(e_{LPD}, e_{Ind})$ $I = R + r_{GB}(e_{HPD}, e_{Coll})$ Conflict
	Group-Centred Loyalty $I = R + r_{GB}(e_{HPD}, e_{Coll})$	$I = R + r_{GB}(e_{HPD}, e_{Coll})$ $I = F + r_B(e_{LPD}, e_{Ind})$ Conflict	$I = R + r_{GB}(e_{HPD}, e_{Coll})$ **Welfare and improvement of group is in the centre of interest**

pattern of co-operating and cheating. The incentive schemes for the two main types are now shown in a 2 × 2 Matrix of individualistic and group-centered behavior with the possible equilibria outcomes. Table 2 shows the contracts offered when the four combinations meet.

The table identifies the relevant linear incentive schemes to avoid cultural clashes Ott (2006). The cultural profiles target cultural groups and avoid culturally-rooted cheating. The group incentives and bonuses play an important role in this context. We can therefore show that the fixed components in the column with low individualism or collectivism are based on R *relationship rewards* and the column for high individualistic cultures has F for *financial rewards*. The variable part contains the r royalty indexed with group benefit GB or bonus B and the effort level as a combination of hierarchical and collectivist/individualist efforts induced.

In order to adjust to the information asymmetry in an international setting, the various contract designs show the contingencies of cheating dependent on the cultural dimensions. The contracts encourage the agent to tell the truth about their efforts. This means that the agent instead of using the effort to cheat uses an effort to co-operate. The grey shaded zones show the cultural behavior for which it will be still difficult to find cooperation, since their intrinsic behavior has different cultural roots (individualism versus group behavior).

The Design of Incentives for the Cultural Types of Individualistic Entrepreneurship and Group-Centered Loyalty

The concept shows the clash of individualistic and group-centered behavior in international entrepreneurship situation of collaborations across border and the design of incentives to circumvent conflict. Incentives to cooperate are relevant

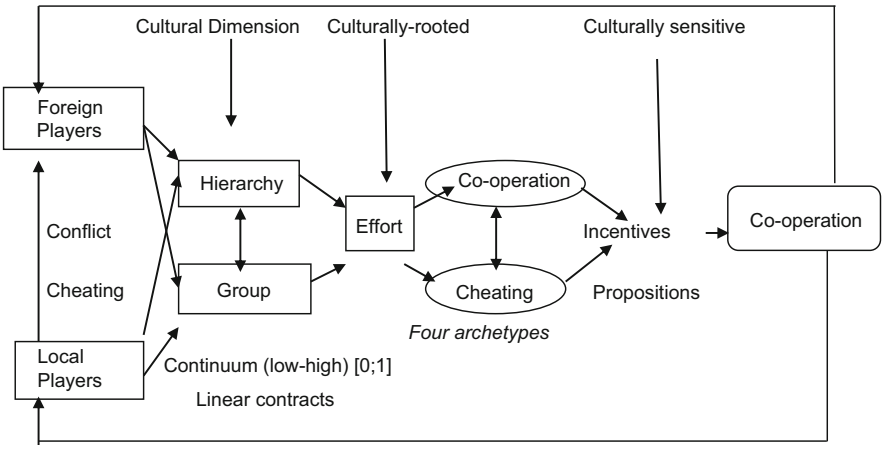


Fig. 5 Concept of incentives for culturally co-operative behavior—model

for those cases in which the cultural schemes do not match between foreign and local player. Figure 5 provides the conceptual summary for this chapter below.

4 Conclusion

This chapter combines the grid/group analysis of cultural anthropology Douglas (1970), Mars (1994) and Ott (2006), cultural models of co-operation Chen et al. (1998) and rewards as mechanisms of co-operation Chen et al. (1998), Ferrin and Dirks (2003), Bottom et al. (2006) and Welsh et al. (2016) and developed a new framework for 'cooperative cheating' behavior in international endeavors.

Though it is often considered ethically problematic to deal with bribes and corruption when dealing with other cultures, it could be shown that hierarchy in combination with group behavior as well as achievement play a role in an internationally diverse way of cheating. International entrepreneurs are at the interface of multinational market entry and host government rules. Their market knowledge and technological advantage lead to collaborations across borders. Hofstede's indices provided a useful basis to show the relationship between hierarchy (power distance) and group behavior (individualism and masculinity) in country clusters. Family-oriented cultures show a higher propensity to be corrupt which coincides with the group-centered loyalty typology. International entrepreneurs have all archetypical behaviors with a scope from either individualist entrepreneurship to consensus seeking equality and loyalty. For international entrepreneurship behavior, the hierarchy/group perspective provides a good basis to consider the incentives for *group-centered loyalty and individualist entrepreneurship*. The different effort levels considering closeness and distance in terms of hierarchy and group behavior could be connected to the types of cheating. It is more difficult to co-operate for

cultures with high individualism and masculinity scores than for cultures with collectivism and feminism. The effort levels for cultural co-operation are higher for individualist and masculine cultures.

The design of the incentive schemes focuses on these effort levels for cultural co-operation. The linear contracts are either based on rewards for relationship or finance, on bonuses for groups and individuals and on the effort level for cultural co-operation. This leads to a clear deviation from classic incentive schemes which encourage high levels of effort to perform better. The incentive schemes to avoid cheating in a cultural environment are targeted to support a co-operative effort in a cross-cultural work group and a deeper understanding of the cultural differences in motivation. The likelihood that people will cheat in this setting is reduced by specifically targeted incentive schemes to encourage co-operation.

The design of these incentives encourages people to put a high effort into a positive group performance compared to individualistic career goals. In the future, developing incentive schemes for international assignments should be dealt with in a more culturally-sensitive way and as a motivation towards a better understanding of cultural behavior such as cheating and co-operating. International conflicts should be seen in the way Boone et al. (2010) emphasizes that extrinsic incentive should be offered to encourage cooperation in case trust or in the international entrepreneurship case loyalty cannot be assumed to exist in a group per se.

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