

Entrepreneurship: From motivation to start-up

Christophe Estay · François Durrieu ·
Manzoom Akhter

Published online: 31 July 2013
© Springer Science+Business Media New York 2013

Abstract The goal of this article is to reveal the origins of entrepreneurial motivation and to identify the logics of action (entrepreneurial projects) associated with each dimension of this attitude. The study looks to answer the following questions: What needs are at the beginning of a business, what are their intensities, and to what extent does entrepreneurial motivation influence projects? Using questionnaires answered by entrepreneurs who have just created their business, we evaluate the characteristics of entrepreneurial motivation (needs and their intensities), identify the antecedents linked to this attitude, and isolate the entrepreneur logics of action (imitation, innovation–adventure, reproduction, and innovation–valorisation). This study is supported by a theoretical framework that is the result of research on motivation and entrepreneurship. A series of causal relations are isolated and then tested. Analysis enables an ensemble of conclusions to be drawn on entrepreneurial motivation. Pathways of motivation lead to logics of action linked to innovative projects and explain the phenomenon of reproduction (or imitation) found in some entrepreneurs. Development objectives and a need for personal independence are identified at the beginning stages of entrepreneurial planning. Creators hope that their business will bring tangible financial and material results. Entrepreneurs are conscious that they must make a commitment across a range of dimensions for their organisation (managerial, commercial, etc.). In their quest for valorisation, entrepreneurs take risks, exploiting advantageous business contexts, thanks to their competences, and show a need for creativity. These two dimensions (competences and creativity) are associated with the objective of independence. The logic of reproduction is characterised by self-confidence (locus of control) and responds to the objective of business development.

Keywords Entrepreneurship · Motivation · Logics of action · Innovation · Valorisation · Recognition

JEL Code L260

C. Estay (✉) · M. Akhter
KEDGE Business School / LIRSA, Domaine de Raba 680 Cours de la Libération, 33405 Talence
Cedex, France
e-mail: christophe.estay@bem.edu

F. Durrieu
KEDGE Business School, Domaine de Raba 680 Cours de la Libération, 33405 Talence Cedex, France

Introduction

Over the past several decades, entrepreneurship has been an important field of study and there has been considerable debate among researchers who have been interested in understanding the factors affecting entrepreneurial activity. Schumpeter (1965) defined entrepreneurs as individuals who exploit market opportunity through technical and/or organizational innovation. Since then, a large body of literature has accumulated on defining entrepreneurs in terms of their characteristics.

Several recently published studies show re-emergence of interest in the domain of entrepreneurial motivation. Entrepreneurial motivation research is an important aspect of the entrepreneurial process that has been examined only at the margins so far and still needs more understanding (Carsrud and Brännback 2011). Developing a better understanding of entrepreneurial processes and the variables that attract people to entrepreneurship and that facilitate success in an entrepreneurial role is an important undertaking (Hao Zhao et al. 2010). The entrepreneur is the central actor in generating entrepreneurial activity. Therefore, in the beginning, major thrust of entrepreneurship studies have been to search psychological characteristics and personal traits differentiating entrepreneurs from non-entrepreneurs (Brockhaus 1982; Gartner 1985; McClelland 1961). Initially, a number of personal characteristics associated with entrepreneurship including internal locus of control (Rotter 1966), need for achievement (McClelland 1961), belief in the effect of personal effort on outcomes (Lao 1970; Mc Ghee and Crandall 1968), self-confidence or overconfidence (Busenitz and Barney 1997; Stevenson and Gumpert 1985), tolerance for ambiguity (Schere 1982), willingness to bear uncertainty (Kihlstrom and Laffont 1979) and attitudes towards risk (Mintzberg 1973) have been investigated independently. Later on, authors start to emphasize the importance of attitude in the entrepreneur behaviour over personality traits (Robinson et al. 1991) and to start considering entrepreneurial intentions as a precursor of entrepreneur behaviour, see for example, Bird (1989), Boyd and Vozikis (1994). The relevant literature of entrepreneurship contends that an individual's decision to behave entrepreneurially is influenced by more than simply personal characteristics, as proposed in early entrepreneurial literature and is the result of the interaction of several factors including personal characteristics, personal and business environment, individual's personal goal set, a viable business idea and individuals perception of the probable outcomes and the personal expectations (Cohen and Bacdayan 1994). This has also been argued by Degeorge and Fayolle (2011) in their study in French context that entrepreneurial process leading an individual from intention to action is influenced also by external factors in addition to internal factors. Thus, the purpose of our research is to investigate the pathways of motivations by looking into the interactive relationship among entrepreneurial motivations, perceptions and outcomes.

Various trans-disciplinary approaches have emerged and researchers have put forward explanatory models for entrepreneurial motivation (Man et al. 2008; Steel and König 2006; Schindehutte et al. 2006; Naffziger et al. 1994). Motivation to become an entrepreneur is considered to be the result of psychological construction and is a major explanatory factor in an individual's ability to mobilise in the pursuit of goals. The conceptual approach to entrepreneurial motivation has its origins in the discussion of motivation theory found in research on psychology and management (Kark and Van Dick 2007; Segal et al. 2005; Lee 1997; Birley and Westhead 1994; McClelland 1961) and in recent work on the origin of the entrepreneurial act (Baron 2008; Baron and Ward

2004; Boyd and Vozikis 1994; Learned 1992; Gartner 1985; Shapero 1984). Relevant literature shows that motivation to behave as an entrepreneur can be understood as a personal process resulting from the interaction of several factors and should be understood as the expression of a particular attitude, resulting from individuals' self-image and their needs for accomplishment, autonomy, creativity, control and risk taking (Cromie 2000). Researchers in the past have explored several motivations and their effects on entrepreneurial decisions. However, entrepreneurship is a multidimensional process and personal traits are just one component (Gartner 1988). The intentionality of entrepreneur is also considered as an important key factor in this process (Bird 1988) which means the intention to find and manage one's own business is also a first critical step in the process of becoming an entrepreneur (Krueger et al. 2000; Bird 1988). In this regard, two principal factors are identified: entrepreneurs' perceptions that their actions lead to results and that these results reach or surpass expectations (Naffziger et al. 1994). Secondly, outcome also underlies the individual's ability to continue as an entrepreneur (Hao Zhao et al. 2010) and individual enters the entrepreneurial process with the expectation of intrinsic and extrinsic outcomes (Naffziger et al. 1994). Personal traits of individual affect the outcomes therefore we also intend to examine the links among the various goals at the beginning stage of business creator motivation and the type of business to be developed, i.e. the links between the needs associated with motivation and entrepreneurs' logics of action. In this regard, Bruyat (1993), influenced by Arocena et al. (1983), suggests four types of logics of action: (1) imitation, (2) innovation–adventure, (3) reproduction, and (4) innovation–valorisation. This categorisation leads to questions on links between entrepreneurial motivation and resulting projects.

Therefore, the research question we pursue in this study is what characteristics/attributes French start-ups have and how these attributes affect the intentions and outcomes of the entrepreneurs. This study explores the entrepreneurial motivations of start-ups and investigates the extent to which these motivations are needed and influence the project outcomes. And finally, the causal pathway of motivation between antecedents, the needs at the beginning of this attitude and the action (imitation, innovation–adventure, reproduction and innovation–valorisation) is developed.

This research has theoretical and methodological contributions. Theoretically, the objective is to reveal the dimensions of entrepreneurial motivation and to identify the entrepreneurial logics of action. The links between needs and logics of actions (imitation, innovation–adventure, reproduction, and innovation–valorisation) is examined and compared with previous studies. Methodologically, the analytical framework is built on an original measure of entrepreneurial motivation inspired by Caird (2006), who suggests a GET2 (General measure of Enterprising Tendency Version 2) questionnaire that covers five main dimensions: accomplishment, autonomy, control, risk and creativity. The GET measure is subject to a confirmatory analysis. It should be noted that other instruments for measuring needs (Brockhaus and Horwitz 1986; Koh 1996) have not been validated for multiple samples. Our study is a step towards validating a measurement scale for entrepreneurial motivation. The studies by Caird (1991, 2006) promote the use of a questionnaire aimed at identifying entrepreneurial needs at the beginning stages of business creation. In addition, Caird (1991) use the GET questionnaire to evaluate the attitudes between entrepreneurs and managers (in a sample of 194 individuals). Our study based on a sample drawn from new business creators and brings this instrument into sharper focus which is in response to Hao

Zhao et al. (2010); who suggest that future research on the individual characteristics, cognitions, or behaviour of entrepreneurs should pay increased theoretical attention to the stage of entrepreneurship from which they collect data. International issue of this article is linked to comparison between French survey and previous research developed in other countries. The analysis is compared to survey of Chell (2008) and Cromie et al. (1992).

The structure of the paper can be highlighted as follows: We first review the entrepreneurial literature with a specific focus on personal traits of entrepreneurs and identify the most often tested personal traits by Cromie (2000): accomplishment, autonomy, creativity, control and risk taking as more useful. We also describe perceptions as a previous step of entrepreneur behaviour with regard to venture creation process and identify two variables. Then, we develop a link among the various goals at the beginning stage of business creator motivation and the type of business to be developed. Finally, a pathway between entrepreneur motivations, antecedents and logic of action is developed. Next section presents the methodology, analysis and results. In the fourth part, first we discuss measures of principal measures than two pathways are discussed. Finally, conclusions are drawn in the end of article.

Literature review

Early entrepreneur literature suggested that an individual's behaviour to act as an entrepreneur is simply influenced by personal characteristics and numerous researchers have focused on personal traits distinguishing entrepreneurs from non-entrepreneurs (Brockhaus 1982; Brockhaus and Horwitz 1986). However, research during 1980s started portraying the entrepreneur process as more than personal characteristics, for example, Gartner (1985) suggested entrepreneur process as an interaction of environment (surrounding influencing new business), individual (person involved in the creation of new business), organization (kind of firm that is being started) and behaviour (actions undertaken to start a new business). Later Johnson (1990) also suggested that entrepreneurship is a multidimensional process that demands the utilization of multidimensional models for a true understanding. Various interactive models, e.g. Greenberger and Sexton (1988), Learned (1992), and Herron and Sapienza (1992) were proposed during late 1980s and early 1990s to better understand the new venture creation process. Literature during 1990s emphasized that the decision to behave entrepreneurially is based on more than personal characteristics and individual differences. The interaction of personal characteristics with other important perceptions of situational factors needs to be better understood (Naffziger et al. 1994). Naffziger et al. (1994) contended that decision to behave entrepreneurially is the result of interaction of several factors including personal characteristics, personal and business environment, personal goals a viable business idea and then comparison between perception of probable outcomes and personal expectation of individuals. Motivation leads and supports the action and is based on individual's needs, values, desires, goals and intentions as well as on the compensation and rewards that influence these mechanisms (Grigore 2012).

To better understand motivations when starting a new venture, we develop an analytical framework (Fig. 4) based upon previous literature which we explain in the

sections below. The analytical framework is built on personal traits of motivation, on the identification of motivational antecedents, and the logics of actions of business creators. The perception of individual plays an important role in the motivation process. The individual must perceive that the action taken by him will lead to specific goals and outcomes and that these outcomes will meet the expectations. Motivation is directly linked to goals and type of business to be developed is linked with the various goals at the beginning stage of business creators' motivation.

Entrepreneurial motivations

Research scholars in the past have explored several concepts of motivation (Shane et al. 2003). However, to better understand the motivation, we adapt the approach of Louart (1997), where motivation is shown as a link between the activation of internal energy and its channelling towards business creation. It is the result of personal and environmental determinants that are more or less conscious and direct the subject to create a business that is formed from representations and challenges that he sees for himself. A recent study by Steel and König (2006) shows that need is the central characteristic for the source of motivation. Steel and König (2006) introduce an original approach on motivation without being specifically interested in the entrepreneur. They present a new motivation theory which is a synthesis of approaches developed since the 1990s, i.e. piceoeconomics (Ainslie 1992), expectancy theory (Vroom 1964), cumulative prospect theory (Tversky and Kahneman 1992), and need theory (Dollard and Miller 1950). This theory called Temporal motivational theory is built on four key components of motivation theory: value, expectations (Bandura 1997; Carver and Scheier 2002), time (Ainslie 1992), and perceptions of profits and losses. This theory argues that to determine the value concerning a specific individual and choice, it is necessary to understand the need and measure the relative satisfaction perceived. This approach shows that needs occupy the central place in the identification of the origins of motivation.

Review of the relevant literature shows that motivation should be understood as the expression of a particular attitude, resulting from individuals' self-image and their needs (Cromie 2000). Motivation is based on individual's needs, values, desires, goals and intentions as well as on the compensation and rewards that influence these mechanisms (Grigore 2012). We argue that there is a link between the needs associated with motivation and entrepreneurs' logics of action and there is a causal pathway between motivation antecedents, the needs at the beginning of this attitude, and the action. For the evaluation of entrepreneurial motivation which is an attitude made up of objective and subjective components, there is, on the one hand, the issue is to identify the needs and their diversity at the origin of entrepreneurial motivation and on the other hand, some characteristics (e.g., age of entrepreneur, training, perceptions, etc.) can affect motivation that influence in the entrepreneurial act. The needs associated with motivation are linked to entrepreneurs' logic of action. For instance, either a need for accomplishment push an entrepreneur to innovate or to reproduce an already tested business model (Verstraete and Jouison-Laffitte 2009) or is the need for entrepreneurial autonomy linked to risky projects or those of imitation? The perception of entrepreneur also plays an important role in the motivation which means their perception that their actions lead to results and that these results reach or surpass expectations.

Personal traits of entrepreneurs

During the early 1980s, numerous scholars focused on personality differences of entrepreneurs and non-entrepreneurs (Naffziger et al. 1994) and a number of personal traits associated with entrepreneurship have been investigated. It is contended that these personality traits are important determinants of entrepreneur behaviour (Cromie 2000) and also vary according to culture and primary goal of entrepreneur for venture (Stewart et al. 2003). Previous literature has discussed as many personal traits as researchers. Several studies have attempted to understand entrepreneurial motivation through measures of accomplishment, control and autonomy (Chen et al. 1998; Kuratko and Hodggets 1995; Cromie et al. 1992; Caird 1991; Chell et al. 1991; Koh 1996; Rotter 1966). Other measures discussed in previous literature are creativity (Cromie and O'Donoghue 1992; Chen et al. 1998; Cromie et al. 1992; Caird 1991; Koh 1996), tolerance to ambiguity (Koh 1996; Mitton 1989), confidence of the entrepreneur (Koh 1996; Ho and Koh 1992), conformity and need for autonomy (Sexton and Bowman 1986), persistence and dominance (Neider 1987), desire for personal control (Greenberger and Sexton 1988), the desire to build something of one's own (Knight 1987) and greater freedom to adopt their own approach to work (Turan and Kara 2007).

Entrepreneur research has been hampered by a lack of agreement about the essential traits. However, the personal traits such as need for achievement, locus of control and risk taking propensity were mainly focused by the researchers (Naffziger et al. 1994; Rauch and Frese 2000). Need for Achievement (McClelland 1961), and Locus of Control of Reinforcement (Rotter 1966) could be considered as having significant value, across several studies (Johnson 1990; Venkatapathy 1984). Fortunately, some studies, e.g. Koh (1996) has depicted some essential traits of entrepreneurs. Cromie (2000) suggested Durham Business School General Entreprising Tendency Test (GET) as more useful in this regard because it is comprehensive, accessible and easy to administer and score. It is not possible to give a complete picture of personal characteristics that increase the chance of one's being an entrepreneur. However, for this study, we retain the most often tested personal traits by Cromie (2000): accomplishment, autonomy, creativity, control and risk taking (Fig. 1), which we will discuss in the following paragraphs. And in the paragraphs below we discuss these most widely cited personal characteristics in the literature.

Need for achievement motivates individuals to overcome obstacles and is regarded as a key entrepreneurial attribute by many researchers. McClelland (1961) argues that individuals with high need for achievement are more likely to become entrepreneurs and entrepreneurs show greater achievement motivation than managers (Stewart and Roth 2007). Rauch and Frese (2000), Johnson (1990) and Begley and Boyd (1987) found a significant relation between need for achievement and entrepreneur activity. However, Hull et al. (1980) and Bonnett and Furham (1991) found non-significant association.

Risk taking refers to the acceptance of risk in undertaking a certain activity. Several recent studies suggest that risk taking may or may not be an entrepreneurial motivation (Shane et al. 2003). Various studies claim no significant difference between entrepreneur and non-entrepreneur (Low and MacMillan 1988; Babb and Babb 1992; Palich and Bagby 1995). However, Begley (1995) found the risk taking propensity as the only trait which differentiates founders and non-founders. Koh (1996) also finds that entrepreneurially

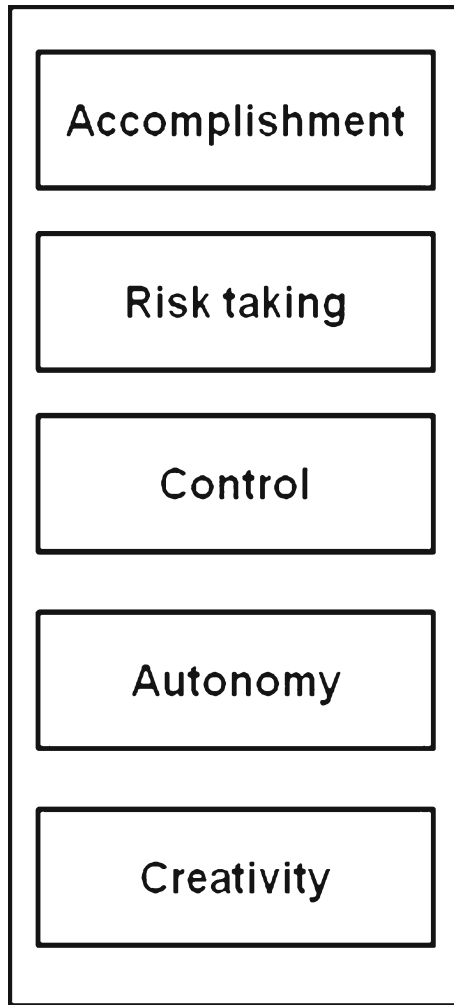


Fig. 1 Personal traits

inclined individuals have significantly higher risk scores than the non-entrepreneurially inclined. Fry (1993) and Cornman et al. (1988) reported that firm founders have a higher propensity for risk but do not perceive their actions as risk. However, it is normal that entrepreneur seek opportunities while working in an uncertain environment and must not be averse to risk taking. Many scholars suggest that entrepreneurs assess and calculate risks carefully and are more likely to be moderate than high risk takers (Caird 1991; Cunningham and Lischeron 1991).

Locus of control is another important dimension which refers to the belief in the extent to which individuals believe that their actions or personal characteristics affect outcomes (Shane et al. 2003). It can be internal or external. Individuals who are high in need for achievement prefer situations in which they perceive that they have direct control over outcomes or in which they feel that they can directly see how their effort affects outcomes of a given event (McClelland 1961). The research on locus of control

suggests that firm founders differ from the general population in terms of locus of control. For example, Rotter (1966) argued that individuals with an internal locus of control would be likely to seek entrepreneurial roles. This was also confirmed by other studies, for example Shapero (1977) and Bowen and Hisrich (1986). However, Babb and Babb (1992), Brockhaus (1982), Koh (1996) have not found a difference between firm founders and managers on locus of control. Persons with a high level of perceived control (internals) have been associated with entrepreneurial behavior and a preference for innovative strategies (Hansemark 2003; Mueller and Thomas 2001; Miller et al. 1982; de Vries MFR 1977).

Need for autonomy can be seen as equivalent to the need for independence. Aldridge (1997) found that founders are significantly higher than general population on personality measures of independence and many other previous studies have also claimed that entrepreneurial role necessitates independence (Shane et al. 2003). Caird (1991) also shows that entrepreneurs have a stronger need for autonomy than many other occupational groups. Collins and Moore (1970) found that entrepreneurs prefer to avoid the restrictions imposed by rules, procedures, and social norms. Cromie (2000) claims that independence and self-confidence are also important because entrepreneurs want to be in control and many find it hard to function within a restrictive environment. Earlier, Cromie (1987) and Kuratko and Hodgetts (1995) has claimed independence as a key attribute.

Creativity has been described as “developing new methods instead of using standard procedures (p. 72)” (Born and Altink 1996). Entrepreneurs develop new ideas or combine existing ideas and resources to create additional value and market opportunities (Cromie et al. 1992), which cannot be achieved by simply sticking to prescribed details (Biemans 1992). In recent years, there has been considerable debate about creativity, for example, Caird (1991), Cromie and O'Donoghue (1992) and Cromie et al. (1992) suggests that owner-managers are more creative than undergraduates and managers. However, some authors, see for example Holt (1983), distinguish between creativity and innovation and consider that innovation is a systematic work and not a personality trait (Drucker 1985) but others do not agree. Koh (1996) confirms that entrepreneurs are more innovative. Chen et al. (1998) also confirm that innovation is an important aspect of entrepreneurial self-efficacy. In connection with creativity, researchers using the GET test, find that owner-managers have a greater creative tendency than nurses, civil servants and clerical trainees, but are not significantly more creative than teachers, lecturers or trainers (Cromie 2000).

Based upon our above discussion, we retain for this study the most often personal traits tested by authors (Cromie 2000): accomplishment, autonomy, creativity, control and risk taking (Fig.1). Cromie (2000) reported that there is confusion in literature about relevant personal traits and instrument used are complex and their validity and reliability is also under question and he suggested GET test as a useful measure because various other studies, (for example, Caird 1991; Cromie and Callaghan 1997; Cromie and O'Donoghue 1992) have found that the GET has criterion and convergent validity and good internal consistency.

Antecedents of motivation

Previous literature also emphasize that perception of individual plays an important role in motivation process and perceptions can be considered as a previous step of entrepreneur behaviour with regard to venture creation process. Brenner et al. (1991)

argued that perceptions can make a person avoid entrepreneurship and can make him choose paid employment. Mitchell et al. (2007) noted that the central question for research on entrepreneurial cognition is “How do entrepreneurs think?” because this would provide much greater understanding of their subsequent decisions and actions. Bird (1988) argued that entrepreneur intentions are shaped by personal and social factors and a common perspective is that potential entrepreneurs with high levels of confidence in potential outcomes are likely to start new ventures (Townsend et al. 2010). First, the individual must perceive that the action taken by him will lead to specific outcomes and goals and these outcomes will meet the expectations. These expectations are positively related to firm start-up based on the notion that only those confident of successfully achieving desired outcome will start a new venture (Hayward et al. 2006). Motivation to behave entrepreneurially will be stronger if there is a strong relationship between actions taken and firm outcomes and secondly between action taken and expectations (Naffziger et al. 1994).

For our analytical framework, two variables for the expression of motivation are retained: first, the perception of relation between action taken and results and second, perception of relation between expectations and results (Fig. 2). These two variables are drawn from the model of Naffziger et al. (1994). The explanatory model suggested by Naffziger et al. (1994) and related empirical results are often quoted in more recent studies on entrepreneurial motivation (Edelman et al. 2010; Wiklund et al. 2009; Runyan et al. 2008; Goss 2008; Krueger 2007). This model is used in a more general framework and gives a new explanation for entrepreneurial behaviour (Kuratko et al. 2005). One of the principal perceived relations is between entrepreneurial strategy and business results. Entrepreneurs must be convinced that the strategies and managerial actions they carry out will lead to tangible results (such as growth of sales, profit, personal wealth or market share). From the moment they take control of a business, they must link actions to results. The entrepreneurial motivation model shows that the greater the perceived relation between these two elements, the greater the motivation to continue to act as an entrepreneur, whether in developing an existing business or in creating a new one. Another factor that influences motivation is the perception that results will reach or surpass expectations. It is suggested that entrepreneurs commit to the process with expectations of intrinsic or extrinsic rewards deriving from businesses activity. The expectations vary from one individual to another. They change with the emergence of new opportunities or in relation to operational reality or competition.

Logics of action

Psychological dispositions vary according to entrepreneurial goal orientation. It is the mindset of the entrepreneur, through which the individual promotes flexibility, creativity continuous innovation and renewal (Ireland et al. 2003). Current literature also argues that motivation is directly linked to goals (Locke and Latham 1990) and goals are anticipated future action results (Hacker 1985) and these anticipated results can be visualized and thereby produce motivation (Locke and Latham 1990). Goals have been suggested as the basis for categorizing entrepreneurs (Woo et al. 1991). These categorizations and/or typologies are helpful in their ability to predict an actor's behaviour. These typologies not only help explain the actions, attitudes, and activity choices but also help to understand the actor's reaction to their environment.

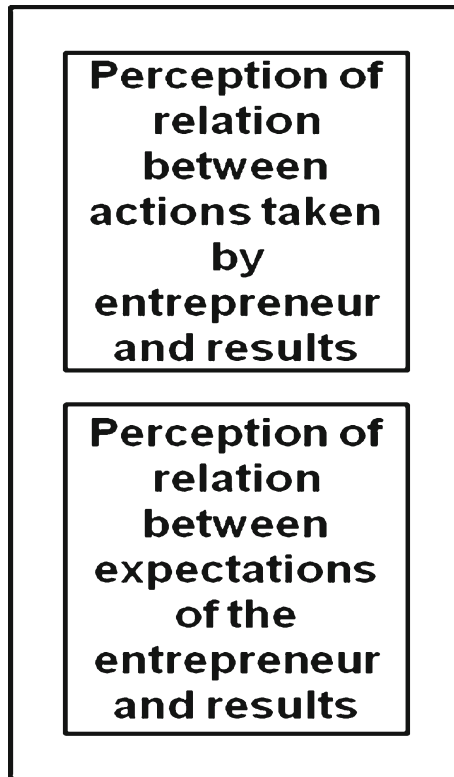


Fig. 2 Antecedents of motivation

One of the objectives of this article is to identify the links among the various goals at the beginning stage of business creator motivation and the type of business to be developed. Numerous entrepreneurial typologies, for example, Collins and Moore (1970), Laufer (1975), Miles and Snow (1978), Vesper (1980), Julien and Marchesnay (1996), Carland et al. (1988), Lafuente and Salas (1989), Filion (1998), Marchesnay (1998), Duchéneaut (1999), have been presented in the past to advance our understanding of different reasons why different entrepreneurs found new ventures. For this purpose, we have preferred Bruyat's (1993) typology who presents the logics of action after an in-depth analysis of entrepreneurial typologies. We prefer Bruyat's (1993) because it is more focused on new business creators rather than owner-managers of small businesses (who may have started some time before and so are in a different context to a start-up entrepreneur). Building on the work of Arocena et al. (1983), Bruyat puts forward a two-dimension typology of creator logics of action: one dimension that measures the intensity of change for the creator and the other that assesses the level of novelty in the environment. Figure 3 illustrates this approach. To reproduce another business, entrepreneurs look to do more or less what they did in previous professional activities. To imitate a business, they follow a well-tested formula without yet having all the necessary skills and resources. To accomplish an innovation–valorisation, individuals create their enterprise from a product or process in which they are already fully competent. The difficulty comes from a lack of acceptance of their efforts by the socio-economic environment.

Innovation–adventure arises from an uncertain context in which the entrepreneur does not have all the necessary skills for entrepreneurial success.

Based upon our above discussion, we develop our analytical framework (Fig. 4) for entrepreneurial motivation. This framework describes the relationship between entrepreneurial motivations, its antecedents and entrepreneur logic of action. Motivation is based on individual's needs, goals and intentions as well as on the rewards. There is a link between the needs associated with motivation and entrepreneurs' logics of action and also between motivation antecedents, the needs at the beginning of this attitude and the action. First, an individual perceives that actions taken by him will lead to specific outcomes and these outcomes will meet his expectations and these anticipated results produce motivation for an individual to be an entrepreneur.

Methodology

A questionnaire based on previous studies of Caird (2006) and Bruyat (1993) was prepared. The questionnaire was broken into four parts. The first three parts included questions for motivation (54 items), antecedents (11 items), and logics of action (10 items), respectively and the fourth part included information about entrepreneurs and their business. The analytical framework combined motivations, antecedents, and logics of action. Motivation was measured via the GET2 questionnaire. First, the GET tool was developed in 1988. Our study was based on Caird (2006) because of its robustness and assumed entrepreneurship as a wider concept and recognize that entrepreneur are distinguished by their growth orientation, motivation, type of business, involvement with new technology and association with business owner management. The GET2 questionnaire was created by Caird (2006) which incorporates five principal dimensions of motivation: accomplishment, autonomy, control, risk and creativity. The dimensions of tolerance to ambiguity and assurance were not retained due to their similarity to other factors. We chose this questionnaire because it was recent and was developed from the principal research on motivation measurement. The second part included statements about antecedents of motivation. For

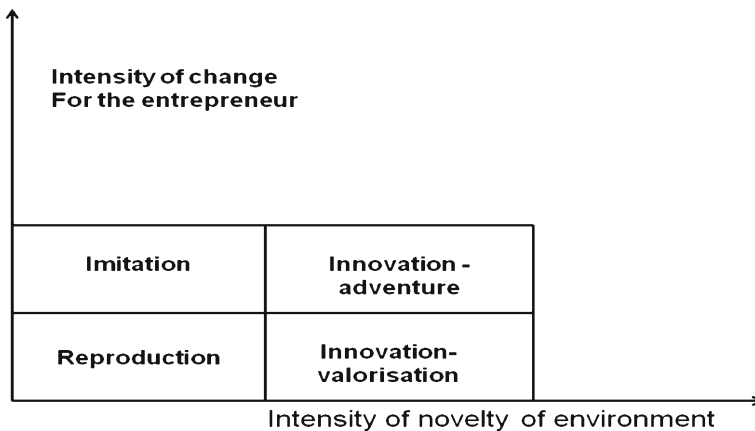


Fig. 3 Business creator logics of action (source: Bruyat 1993)

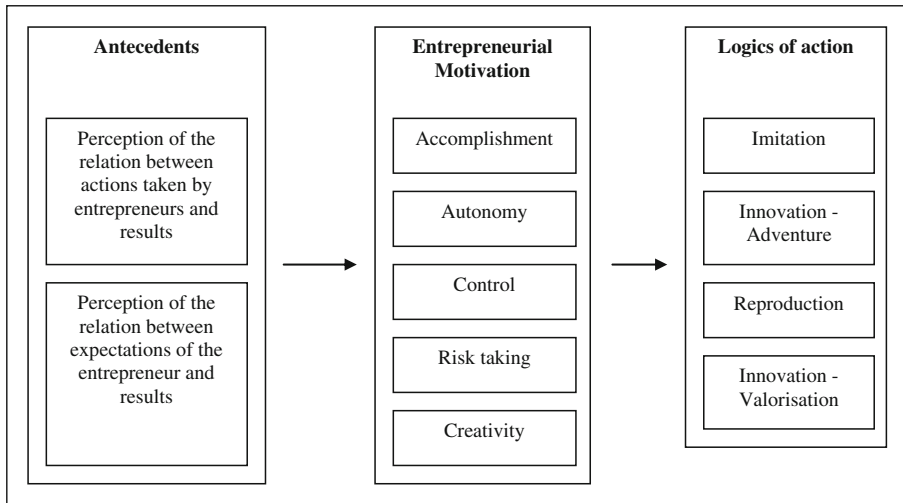


Fig 4 Entrepreneurial motivation, antecedents and logics of action

antecedents, two types of perceptions were retained from the study of Naffziger et al. (1994). First is the perception of the relation between expectations and results and measured through assessing five items that cover the dimensions of business performance (you start your project with the objective of making significant profits; your goal is to rapidly develop your business; you think you can repay loans without difficulty; your goal as business person is to be independent; your business is a way of controlling your future). Second is the perception of the relation between actions and measured across six items (spending time on the business is a source of satisfaction in itself; building up contacts with business partners (clients, suppliers, etc.) reinforces commitment; keeping up with business results is stimulating; following a commercial approach is important in developing the business; keeping up good relations with the bank is a good way of getting through difficult times; rigorous management allows the business to perform better). Third part included questions about logic of action and was taken from Bruyat (1993). A ten-item questionnaire identified the entrepreneurial logics of action. All statements were measured using Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). The questionnaire developed in French language was served to the respondents.

Data was collected from entrepreneurs in Bordeaux, a port city in the Gironde department in south-western France. Data was collected during 3 months from June to August 2011. A large sample was necessary to carry out optimal testing. Therefore, the local Chamber of Commerce and Industry, Bordeaux (CCIB), France was contacted to administer questionnaires directly to those who approached CCIB during this period. Questionnaires were served to all those entrepreneurs who approached CCIB for the registration of their businesses which is a legal requirement in France to start any business. The total collected responses were 235 with 100 % response rate because questionnaires were administered directly to start-ups during their registration process with CCIB and there was no refusal. The criterion for sample selection was entrepreneurs registered with CCIB having a formal project and start-up entrepreneur was defined as the individual who wants to start a new business. There was

no selection on the basis of age, sex and level of education. Entrepreneurs from industrial and service sectors were selected while others from agriculture sector were excluded because of subsidies paid by the government. The main characteristics of the sample studied are summarised in Table 1.

First, the variables concerning motivation were measured. The measurement tool for entrepreneurial motivation, developed from GET2, underwent a factor analysis (PCA) to gauge the quality of each of the dimensions: accomplishment, autonomy, control, risk, and creativity. An oblique promax rotation was done for each factor analysis. The construct was validated by the Fornell and Larcker procedure¹ (1981). Reliability is assumed when all indicators measure the same construct and not in too unequal a manner (i.e. loadings must be of a comparative level). The ρ indicator is used to measure the construct internal coherence. To measure the reliability of the constructs, we then used ρ instead α of Cronbach, a more powerful test with small sample, scale with limited items (less than four items) and a composite reliability for a same construct (Peterson 1994). The coefficients of convergent validity were close or superior to 0.5, see the Table 2. The construct was verified by the convergent validity criteria. The square correlations between two dimensions were inferior to the two convergent criteria of the same two dimensions. The internal coherence coefficients were above 0.8. The entrepreneurial motivation construct therefore can be assumed to be reliable. Similarly, the variables that can influence entrepreneurial attitude, i.e. antecedents and logics of action were evaluated in same manner by Fornell and Larcker (1981), see Tables 3 and 4.

Finally analysis was conducted to determine the motivation pathways from antecedents to logic of action. The analytical framework that relates the antecedents to the logics of action (see Fig. 3) was validated by a path analysis under EQS (Bentler and Wu 2002) using the factorial scores from previous analyses. For the sample size, a path analysis approach² linking observable variables was used because the number of parameters to estimate was less than the number of explicative variables and variables to be explained (because of sample size).

Analysis and results

The analysis was conducted in two steps. First, the analysis of questionnaire, i.e. different blocks of analytical framework (entrepreneurial motivation, antecedents and logics of action) was conducted. Then, in the second step, analysis to validate was conducted.

¹ To validate the construct, convergent and discriminant validity is verified as well as the reliability of the construct. Convergent validity is verified as follows: each indicator must share more variance with the construct than with error. The goal of discriminant validity is to verify that a construct dimension is not defined by another construct. In this way shared variance among the theoretical variables must be inferior to that shared by theoretical variables and their indicators. The internal coherence or reliability of a measure is ensured when the indicators measure the same theoretical variable and have the same level of contribution.

² Path analysis is an approach to modeling explanatory relationships between observed variables. The observed variables are assumed to have no measurement error (or contain error that is negligible). The dependent variables may contain error of measurement that is subsumed in the residual terms of model equations (Ryakov and Marcoulides 2000).

Table 1 Main characteristics of sample studied

Total sample size	235	
Nationality		
French	204	86.8
Non French	31	13.2
Gender		
Male	138	58.7
Female	97	41.3
Age		
18–25 years	44	19.2
26–35 years	87	38.0
More than 35	98	42.8
Marital status		
Single	108	61.4
Married	68	38.6
Number of children		
No child	115	52.3
1 child	46	20.9
2 or more than 2	59	26.8
Education		
At least 2 years in university		
Education	136	58.4
Experience		
0 to 5 years	162	71.4
5 to 10 years	32	14.1
More than 10 years	33	14.5
Background		
Family business	78	30.6
Executives	57	22.4
Non Executives	120	47.0

Questionnaire analysis

The analysis reveals that among the five dimensions of motivation (i.e. accomplishment, autonomy, creativity, risk taking, and control) autonomy is weakly linked to the other four dimensions. Four dimensions (accomplishment, creativity, risk taking and control) are confirmed by a model of structural equations, and the quality of the fit was satisfactory ($\chi^2=67.92$; $p=0.05$; GFI=0.94; AGFI=0.91; CFI=0.98; RMSEA=0.02).

Cromie et al. (1992) showed a significant difference between entrepreneurs and managers in the autonomy, risk, and control dimensions and autonomy was also found in the work of Sexton and Bowman (1986) and Brandstätter (1997). However, in a detailed review of the relevant literature, Chell (2008) reported that this dimension has provoked debate. He recalled that the autonomy dimension of EPPS (Edwards' Personal

Table 2 The validity of the entrepreneurial motivation construct

	Joreskog Rho	Convergent validity	Accomplishment	Autonomy	Creativity	Risk taking	Control
Accomplishment	0.85	0.51	1				
Autonomy	0.88	0.67	0.01	1			
Creativity	0.83	0.49	0.14	0.01	1		
Risk Taking	0.82	0.47	0.07	0.00	0.05	1	
Control	0.87	0.56	0.11	0.01	0.03	0.16	1

Preference Scale) was not confirmed by various studies. In addition, autonomy is often confused with independence and is not confirmed by scholars as a motivational component. Using samples based on the owners of small businesses rather than their creators also causes confusion. Chell (2008) suggested carrying out new studies on samples of business creators to confirm or not the presence of an autonomy dimension. Our study conducted on a sample of new business creators, in response to recommendation of Chell (2008), rejects this component.

The analysis of antecedents reveals two dimensions; (1) objective of independence and (2) objective of development. It should be remembered that we tested perceptions, what the entrepreneur looks for consciously. It does not act here as a component of entrepreneurial motivation (defined as an attitude) but a willingness to generate profits. The first, i.e. objective of independence, is typified by a search for financial independence with creators having expectations of their businesses producing results. And the second, i.e. the objective of development, can be viewed as the creators' perception that the business is growing due to their own work. Their actions are the origin of this development.

The analysis of logic logics of action shows three principal dimensions; (1) reproduction, (2) adventure, and (3) valorisation. Our study does not reveal the logic of imitation. This dimension presupposes a strong intensity of change in the creator and low environmental change. It shows the typical case of professionals who diversify their activity in traditional markets but have no experience. Our sample does not contain such entrepreneurs. Our creators prefer to stay in a known environment using acquired skills (reproduction) or move towards new horizons (innovation).

Validation of the analytical framework

The analysis of the relationship between entrepreneurial motivation, its antecedents and entrepreneur logics of action was conducted and results are discussed below in

Table 3 The validity of the antecedent of the entrepreneurial motivation construct

	Joreskog Rho	Convergent validity	Independence
Independence	0.89	0.80	1
Development	0.81	0.69	0.1

Table 4 The validity of the logics of action construct

	Joreskog Rho	Convergent validity	Reproduction	Valorisation
Reproduction	0.89	0.72	1	
Valorisation	0.85	0.73	0.00	1
Adventure	0.77	0.62	0.00	0.01

two sections: first, we present the study of each block of variables (i.e. entrepreneurial motivation, antecedents, and logics of action) and then we analyse the pathways between the dimensions identified in each block. The complete model is shown in Fig. 5.

Study of block of variables

Our findings show a strong relation between two antecedents: objective of independence and willingness for development (0.72). These antecedents are elements that the entrepreneur perceives. This shows that the search for independence is strongly associated with development. Creators look for financial independence and commit to achieve the results that they demand. We analyse on the one hand expectations and results, and on the other actions taken and results. These data indicate a sense of realism on the part of business creators who are ready “to invest time on their project,” “to keep up relationships with partners,” “to commit to commercial approaches” so as to reap “significant benefits,” “to develop business,” and so on. It should be noted that the two dimensions are not linked by a unique causality.

The analysis of the block of variables measuring motivation shows two among the four retained dimensions (i.e. risk taking, accomplishment, control, and creativity). Accomplishment has a positive impact on creativity (0.35) and a negative impact on control (-0.25). A few studies present results on the relations between the dimensions (Stewart and Roth 2001). Cromie (2000), Miller and Friesen (1982), and Atkinson and Birch (1979) insist on the difficulty of isolating the relations between the needs for accomplishment, controlling one’s destiny (which can be considered as control), and risk taking. Our findings underline the central role of the need for accomplishment, which is stressed by previous studies (Steel and König 2006). The need for accomplishment pushes the creator to creativity (a new idea, a new opportunity to exploit, a different

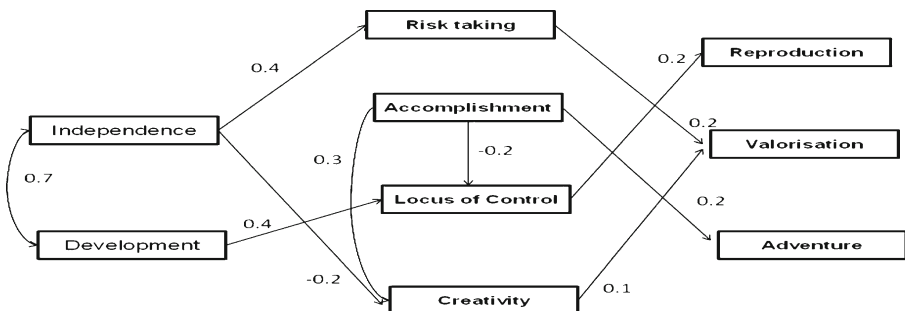


Fig 5 Entrepreneurial motivation, antecedents and logics of action

business model, etc.). At the same time, the need for control is less felt by the entrepreneur, who is ready to accept greater personal latitude to satisfy the need for accomplishment. Accomplishment is a pivotal dimension and a reinforcing element for two other components: creativity and control.

Validity of analytical framework

The analytical framework was validated by least squares estimation (path analysis). All the fit indices (GFI=0.96; AGFI=0.93; CFI=0.99; RMSEA=0.03) respect the validity criteria. In addition to the general framework that shows the links among antecedents, motivation, and logic of action, several ensembles of relations were identified.

The goal of business development influences control (0.43). Growth presupposes a control of internal and external environments (for example, the development of a business demands an understanding of the market). Control is linked to reproduction (0.29), which is defined by low change for the entrepreneur and high change for the environment. Need for control leads to management of external instability. Sense of accomplishment via control also has an impact on reproduction. The second causal pathways leading from independence clarify the links between entrepreneurial motivation and the trigger events for entrepreneurial start-ups. Independence is positively linked to risk taking (0.41) and negatively to creativity (-0.22). Risk taking is positively linked to valorisation (0.29). Accomplishment via creativity has an impact on valorisation (see Fig. 5).

Discussion

The discussion is developed around the measures of the principal variables and causal relations of the model which we will discuss in the following paragraphs one by one.

Measures

Our study does not reveal entrepreneurial motivation as described by Caird's five dimensions (2006); autonomy is not present. Our findings show that entrepreneurial characteristics of French entrepreneur include risk taking, accomplishment, control, and creativity. Tajeddini and Mueller (2009) reported that prevalence of certain personal traits that increase the likelihood of starting entrepreneur activity in a population varies from country to country. For example, some entrepreneurial characteristics such as autonomy, propensity for risk, and locus of control are higher among UK techno-entrepreneurs while others such as ambiguity, innovativeness and confidence are higher among Swiss techno-entrepreneurs. Numerous previous studies, for example, Begley and Boyd (1987), Green et al. (1996) and Rauch and Frese (2000) have emphasized the importance of need for achievement for entrepreneurs. Similarly, we found empirical support in previous studies for locus of control by Cromie and Johns (1983) and Rauch and Frese (2000) in their articles. Risk taking and creativity have also been often highlighted by previous research. Koh (1996) cited three dimensions in his work on motivation: innovation, risk, and tolerance to

ambiguity. Risk is also an important dimension in the work of Ho and Koh (1992). Our results suggest that business creation responds to a need for accomplishment associated with risk taking. Creativity is encouraged by the need for accomplishment and these two factors limit confidence (LOC). The phenomenon of self-confidence has diverse origins. It is explained by the acquisition of skills, a personal career path and experience. Brockhaus and Horwitz (1986) have analysed this motivational dimension in detail.

The antecedents, i.e. entrepreneurs' perceptions of their expectations and actions were refined during the analysis. Two factors, independence and development, were identified. Our results show that business start-ups produce significant expectations for independence which is in line with previous findings of Shane (2005) and Cynthia et al. (2009). Entrepreneurs understand that their business demands commitment (commercial or management activities, for example), confirming what Hofer and Charan (1984) found in their work. The idea that business creation leads to independence (antecedent) is positively linked to risk taking (0.41) and negatively to creativity (-0.22). The search for results on the part of the entrepreneur leads to risk taking but also reduces the need for creativity. This reflects a search for innovation more than a search for invention (or impractical ideas). This negative relation between independence and creativity marginalises the need for creativity in entrepreneurial motivation and our finding is in line with previous studies, suggesting only three dimensions: accomplishment, control, and risk taking (Lee and Tsang 2001; Chell 2008; Korunka et al. 2003). The second factor, i.e. development, also strongly linked to independence, has a positive relation with control (0.43), suggesting that entrepreneurs are ready to commit to the growth of their businesses and have the perception to control their destinies. Motivation is centred on self-confidence whereas development goes hand in hand with the idea that everything is under the creator's control (Korunka et al. 2003; Lee and Tsang 2001).

Among Bruyat's logics of action (Bruyat 1993), only imitation is not present in our study. If the environment is stable, entrepreneurs do not look for a great change on their own part. There is no perception that other business opportunities may exist in such an environment by being innovative. This attitude is prevalent in the French socio-historic context in which individuals do not seem to easily identify opportunities. Palich and Bagby (1995) state that some entrepreneurs perceive situations more positively than they actually are and identify opportunities where others see none.

Pathways of motivation

Two causal pathways are of particular interest in understanding innovative businesses. One explains the origins of businesses in terms of the reproduction logic of action (Fig. 6); the other shows how businesses view the valorisation logic of action (Fig. 7). A causal link joins the reproduction logic and confidence in one's abilities (0.23) to the goal of development (0.43). Reproduction corresponds to a business project that will encounter a stable environment and in which the entrepreneur will use existing skills. Faith in one's ability and self-confidence (LOC) are linked to this logic of action. This is explained by the need to be self-confident in exploiting a relatively unchanging environment and therefore one that is likely to be competitive.

The building sector is a good example of where innovation is gradual, and there is a large existing pool of skilled people. The goal of development demands that entrepreneurs

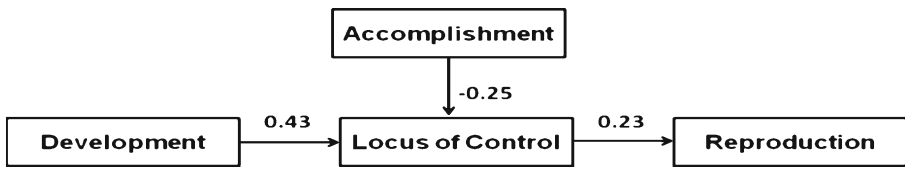


Fig. 6 Origins of the reproduction logic of action

must be convinced of their own abilities to be able to find new contracts and recruit staff. If one of the current challenges of French industry is the development of small businesses, a lever for such growth is increasing awareness amongst entrepreneurs of the importance of managing, directing personnel, and commercialising their products and services.

Accomplishment has a negative effect on faith of individuals in their abilities. This central motivational dimension is a moderating variable lessening the sense of confidence of the entrepreneur. This result contradicts Rotter's conclusions (1966). Self-confidence (LOC) has been the subject of some controversy (Brockhaus 1982; Lee and Tsang 2001; Hansemark 2003). Our results show that the need for accomplishment in the context of motivation makes entrepreneurs not able to accept a possibility of failure, thereby blinding the entrepreneurs to their own limits of capacity. The need for accomplishment moderates the level of confidence that can be excessive in entrepreneurs. Independence, associated in our definition with the objective of results, leads to risk taking (0.41), which makes possible taking new opportunities with already acquired skills (0.29) and ends in the valorisation logic suggesting that a prudent entrepreneur does not look for adventure (new skills associated with new markets). Our results attenuate the conclusions of Miner and Raju (2004) who suggested that entrepreneurs are risk avoidant, a finding in consistent with several other findings, for example, Stewart and Roth (2001) who suggested that risk is positively related to entrepreneur status. Stewart and Roth (2004) helped reconcile this inconsistency and identified that Miner and Raju's meta analysis included outcome measures reflecting firm performance rather than entrepreneur status. Our findings indicate the need to take risk is present in motivation but that this dimension is principally linked to the valorisation logic of action (search for new opportunities). The links for adventure (new skills and markets) and creativity were not found in our research. Our findings are in line with Hao Zhao et al. (2010) who suggested that risk propensity is moderately related to entrepreneur intention. Our



Fig. 7 Independence, source of motivation

results are also consistent with Block et al. (2009) who suggested that risk attitude of different types of entrepreneurs is different and opportunity entrepreneurs are more willing to take risk than necessity entrepreneurs. Our findings confirm the previous work by Caird (1991), Cunningham and Lischeron (1991), Timmons (1989), and Drucker (1985) who state that entrepreneurs measure and calculate risk meticulously and look to control risk. The notion of risk changes with point of view. Chell et al. (1991) show that creators base their decisions on advanced skills within an environment that may appear risky to an outsider, but where they are in control of the principal dimensions.

A second pathway leads to innovation via creativity (0.27) and an objective of independence (-0.22). If the first link is easily explained, such as when there are new opportunities there must be innovation, the second seems more problematic. The objective of results leads to reducing the entrepreneur's need for creativity. This could be explained by the fact that the objective of independence cannot tolerate uncertainty. If entrepreneurs analyse new markets in which to invest, they may prefer the insurance of low levels of innovation in terms of skills and products. The need for accomplishment acts in a positive fashion however in encouraging creativity (0.35).

Conclusion

Our study concludes that entrepreneurial characteristics of French entrepreneur include risk taking, accomplishment, control, and creativity which is line with the findings of Tajeddini and Mueller (2009) who reported that prevalence of certain personal traits that increase the likelihood of starting entrepreneur activity in a population varies from country to country. Although our study, analysing French entrepreneurs, has not led to the five components (i.e. risk taking, accomplishment, control, autonomy and creativity), however, it brings additional support to a robust statistical instrument. Our study identifies the objectives of independence and development as antecedents of motivation. In terms of independence, entrepreneurs hope that their business will bring them concrete financial and material results and in terms of development, entrepreneurs are conscious that their business demands that they commit to all aspects of business (commercial, managerial, etc.). Two pathways explaining the origin of business, i.e. reproduction logic of action and valorisation logic of action are identified. Our study shows that entrepreneurs of innovative businesses are realistic about the difficulties to overcome and expect a return on investment. This is different from the popular image, which shows innovative entrepreneurs as removed from reality. On the valorisation logic of action pathway (environment with significant opportunities for entrepreneurs with key skills), risk taking and creativity are in evidence. The exploitation of an advantageous context presupposes the acceptance of uncertainty and the development of innovation (in this case more related to understanding the market than the offer).

Our study provides important contributions to the academic research and practitioners. Understanding the motivation origins of entrepreneur logic of action enables public and private support to be targeted more efficiently. Our research contributes to the academic literature by profiling the French entrepreneurs. The study reveals that risk taking, accomplishment, control and creativity are important entrepreneur characteristics

in French context. Our study is a new step towards validating a measurement scale for entrepreneurial motivation. Unlike much of trait-based entrepreneur research, our study provides potential insight into the interactive nature of entrepreneurial motivation. Framework integrates the entrepreneurs' personal traits with perception of individual and outcomes of the project. We think that framework can be tested in other countries' context and interactive nature of entrepreneur process can be better understood.

Our research develops pathways that explain the origin of business in terms of logic of action. Causal pathways of motivation lead to logics of actions for businesses based on innovation and reproduction. Keeping in view the lowest level of national Early-stage Entrepreneurship (HEA) rate of France (0.5 %) as compared to USA and Canada (more than 1 %) and neighboring countries like Germany, Switzerland, UK, Norway and Denmark (0.5–0.8 %), this study also provides implication for policy makers and training intervention programs. Personal attitudes are very important to explain the intention of entrepreneurs (do Paço et al. 2011). It is assumed that attitudes and perception can be managed in order to affect the entrepreneurial intentions in a positive way resulting in the economic growth (Guzmán-Alfonso and Guzmán-Cuevas 2012). For public policy makers to design entrepreneurship programs and to encourage successful entrepreneurship, it is important to know the factors which influence and correlate with individual entrepreneurial motivation and how motivation is related to perception. It might be rewarding to give attention to the enhancement of aspiration levels and to motivate individuals to become entrepreneurs. A business incubator specialized in supporting innovation could select potential partners by evaluating their motivations. In case of business take-overs, internal and external challenges are often contrasting depending on situation. Some individuals may need radical change and other may need continuity. The entrepreneur business fit can be better understood by understanding the links between motivation and logic of action. Finally, within a company, the choice of intrapreneur or business manager can be made easier by understanding his motivation in the context of business strategy, comparable in this case to the logic of action.

Limitations

This research has limitations that future studies should address. First, the article uses a questionnaire developed from numerous theoretical and practical works but that has only been partially validated. The sample of French entrepreneurs does not confirm the GET2 structure but suggests the existence of four dimensions instead of five. The sample at the base of this work is made up entirely of local entrepreneurs in contact with their chamber of commerce and industry in Bordeaux, France. It is representative of a single locality; research could be usefully extended to a wider geographical level. Finally, a path analysis was carried out to validate the links between antecedents and the consequent dimensions of entrepreneurial motivation instead of using SEM with the measure of entrepreneurial motivation, its antecedents and its consequences. These limits suggest some lines of complementary research. To improve the reliability and validity of the constructs, a second collection of data could be carried out in similar conditions respecting the Churchill paradigm (Churchill and Paul 1984).

Then to generalise our results, samples could be taken from different geographical regions. A multicultural approach could reveal differences in the dimensions of the entrepreneurial motivation scale and identify new pathways leading to specific logics of action.

References

- Ainslie G (1992) *Picoeconomics: The strategic interaction of successive motivational states within the person*. Cambridge University Press, New York
- Aldridge J H (1997) *An occupational personality profile of the male entrepreneur as assessed by the 16PF fifth edition*. Doctoral Thesis, University of Georgia
- Arocena J, Bernoux P, Minguet G, Paul-Cavallier M, Richard D (1983) *La création d'entreprise, un enjeu local*. Notes et études documentaires Paris: La Documentation Française
- Atkinson R, Birch D (1979) *Introduction to motivation*. Princeton, Van Nostrand
- Babb EM, Babb SV (1992) Psychological traits of rural entrepreneurs. *J Socio-Econ* 21:353–362
- Bandura A (1997) *Self-efficacy: the exercise of control*. Freeman, New York
- Baron R (2008) The role of affect in the entrepreneurial process. *Acad Manag Rev* 33:328–340
- Baron R, Ward T (2004) Expanding entrepreneurial cognition's toolbox: potential contributions from the field of cognitive science. *Entrepren Theory Pract* 28:553–573
- Begley TM (1995) Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs from managers of smaller businesses. *J Bus Venturing* 10:249–263
- Begley TM, Boyd DP (1987) A comparison of entrepreneurs and managers of small business firms. *J Manag* 13:99–108
- Bentler PM, Wu EJC (2002) EQS 6 for Windows: user's guide Multivariate Software, Encino
- Biemans WG (1992) *Managing innovation within networks*. Routledge, London
- Bird B (1988) Implementing entrepreneurial ideas: The case for intention. *Acad Manag Rev* 442–453
- Bird B (1989) *Entrepreneurial behavior*. Scott Foresman, London
- Birley S, Westhead P (1994) A taxonomy of business start-up reasons and their impact on firm growth and size. *J Bus Venturing* 9:7–32
- Block J, Sandner P, Spiegel F (2009) How do risk attitudes differ within the group of entrepreneurs? The role of motivation and procedural utility. *J Small Bus Manag*
- Bonnett C, Furnham A (1991) Who wants to be an entrepreneur? A study of adolescents interested in a Young Enterprise scheme. *J Econ Psychol* 12:465–478
- Born MP, Altink WMM (1996) The importance of behavioural and situational characteristics for entrepreneurial success: an international rating study. *Int J Sel Assess* 4:71–77
- Bowen DD, Hisrich RD (1986) The female entrepreneur: a career development perspective. *Acad Manag Rev* 11
- BOYD N, VOZIKIS G (1994) The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory & Practice* 18:63–77
- Brandstätter H (1997) Becoming an entrepreneur—a question of personality structure? *J Eco Psychol* 18:157–177
- Brenner OC, Pringle CD, Greenhaus JH (1991) Perceived fulfillment of organizational employment versus entrepreneurship: work values and career intentions of business college graduates. *J Small Bus Manag* 29:62–74
- Brockhaus R (1982) The psychology of the entrepreneur. In: Kent C, Sexton D, Vesper K (eds) *Encyclopedia of entrepreneurship*. Englewood Cliffs, Prentice Hall
- Brockhaus R, Horwitz P (1986) The psychology of the entrepreneur. In: Smilor R, Sexton D (eds) *The art and science of entrepreneurship*. Ballinger, Cambridge
- Bruyat C (1993) *Création d'entreprise : contributions épistémologiques et modélisation*. Doctoral Thesis, Université Pierre Mendès, Grenoble, France
- Busenitz LW, Barney JB (1997) Differences between entrepreneurs and managers in large organizations: biases and heuristics in strategic decision-making. *J Bus Venturing* 12:9–30
- Caird S (1991) Testing enterprising tendency in occupational groups. *Br J Manag* 2:177–186
- Caird S (2006) General measure of enterprising tendency version 2 (GET2). In: Mazzarol T (ed) *Entrepreneurship and innovation*. Tilde University Press, Victoria
- Carland JW, Hoy F, Carland JAC (1988) Who is an entrepreneur? Is the question worth asking? *American Journal of Small Business*, Spring
- Carsrud A, Brännback M (2011) Entrepreneurial motivations: what do we still need to know? *J Small Bus Manag* 49:9–26
- Carver C, Scheier M (2002) Optimism. In: Snyder C, Lopez S (eds) *Handbook of positive psychology*. Oxford University Press, London
- Chell E (2008) *The entrepreneurial personality: a social construction*. Routledge, London
- Chell E, Haworth J, Bearley S (1991) *The entrepreneurial personality: concepts, cases and categories*. Routledge, London
- Chen P, Greene P, Crick A (1998) Does entrepreneurial self efficacy distinguish entrepreneurs from managers? *J Bus Vent* 13:295–316

- Churchill G, Paul PJ (1984) Research design effects on the reliability of rating scales: a meta-analysis. *J Marketing Res* 21:360–375
- Cohen MD, Bacdayan P (1994) Organizational routines are stored as procedural memory: evidence from a laboratory study. *Organ Sci* 5:554–568
- Collins OF, Moore DG (1970) *The organization makers: a behavioral study of independent entrepreneurs*. Appleton, New York
- Corman J, Perles B, Vancini P (1988) Motivational factors influencing high-technology entrepreneurship. *J Small Bus Manag* 26:36–42
- Cromie S (1987) *J Occupat Behav* 8:251–261
- Cromie S (2000) Assessing entrepreneurial inclinations: some approaches and empirical evidence. *Eur J Work Organ Psychol* 9:7–30
- Cromie S, Callaghan I (1997) Assessing enterprising attributes: the usefulness of the DUBS General Enterprise Tendency (GET) test. *J Small Bus Enterprise Development* 4:65–71
- Cromie S, Callaghan I, Jansen M (1992) The entrepreneurial tendencies of managers: a research note. *Br J Manag* 3:1–5
- Cromie S, Johns S (1983) Irish entrepreneurs: some personal characteristics. *J Occup Behav* 4:317–324
- Cromie S, O'Donoghue J (1992) Assessing entrepreneurial inclinations. *Int Small Bus J* 10:66–73
- Cunningham J, Lischeron J (1991) Defining entrepreneurship. *J Small Bus Manag* 29:45–61
- Cynthia B, Hung Manh C, Orhan K (2009) Entrepreneurs in Turkey: a factor analysis of motivations, success factors, and problems. *J Small Bus Manag* 47:58–91
- Degeorge J-M, Fayolle A (2011) The entrepreneurial process trigger: a modelling attempt in the French context. *J Small Bus Enterprise Development* 18:251–277
- Do Paço AMF, Ferreira JM, Raposo M, Rodrigues RG, Dinis A (2011) Behaviours and entrepreneurial intention: Empirical findings about secondary students. *J Int Entrepren* 9:20–38
- Dollard J, Miller NE (1950) *Personality and psychotherapy: an analysis in terms of learning, thinking, and culture*. McGraw-Hill, New York
- Drucker P (1985) *Innovation and entrepreneurship*. Heinemann, London
- Duchéneau B (1999) Portrait robot et socio-styles des créateurs d'entreprises en 1998 [Online]. <http://www.apce.com/CHIFFRES/portrait.html>. [Accessed]
- Edelman L, Brush C, Manolova T, Greene P (2010) Start-up motivations and growth intentions of minority nascent entrepreneurs. *J Small Bus Manag* 48:174–196
- Filion LJ (1998) Two Types of Entrepreneurs: The Operator and the Visionary – Consequences for Education. In: Pleitner HJ (ed) *Renaissance of SMEs in a globalized economy*. Verlag KMU/HSG, St-Gall, pp 261–270
- Fornell C, Larcker D (1981) Evaluating structural equation models with unobservable variables and measurement error. *J Mar Res* 18:39–50
- Fry FL (1993) *Entrepreneurship: a planning approach*, Minneapolis-St. Paul, MN
- Gartner W (1985) A conceptual framework for describing the phenomenon of new venture creation. *Acad Manag Rev* 10:696–706
- Gartner W (1988) Who is an entrepreneur? is the wrong question. *American Journal of Small Business* 12
- Goss D (2008) Enterprise ritual: a theory of entrepreneurial emotion and exchange. *Br J Manag* 19:120–137
- Green R, David RG, Dent M (1996) The Russian entrepreneur: a study of psychological characteristics. *Int J Entrepren Behav* 2:49–58
- Greenberger DB, Sexton DL (1988) An interactive model of new venture creation. *J Small Bus Manag* 26:107
- Grigore A-M (2012) The psychology of entrepreneurship. *Romanian Journal of Marketing*, p25
- Guzmán-Alfonso C, Guzmán-Cuevas J (2012) Entrepreneurial intention models as applied to Latin America. *J Organ Change Manag* 25:721–735
- Hacker W (1985) Activity: A fruitful concept in industrial psychology. In: Frese M, Sabini J (eds) *Goal directed behavior: the concept of action in psychology*. Erlbaum, Hillsdale
- Hansemark O (2003) Need for achievement, locus of control and the prediction of business start-ups: a longitudinal study. *J Econ Psychol* 24:301–319
- Hao Zhao, Seibert SE, Lumpkin GT (2010) The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review. *J Manag* 36:381–404
- Hayward MLA, Shepherd DA, Griffin D (2006) A hubris theory of entrepreneurship. *Manag Sci* 52:160–172
- Herron L, Sapienza HJ (1992) The entrepreneur and the initiation of new venture launch activities. *Entrepren Theory Prac* 7:49–55
- Ho TS, Koh HC (1992) Differences in psychological characteristics between entrepreneurially inclined and non-entrepreneurially inclined accounting graduates in Singapore. *Entrepreneurship, Innovation and Change. An Int J* 1:43–53
- Hofer CW, Charan R (1984) The transition to professional management: mission impossible? *Am J Small Bus* 9:1–11

- Holt K (1983) *Product innovation management*. Butterworth, London
- Hull DL, Bosley JJ, Udell GG (1980) Renewing the hunt for heffalump: identifying potential entrepreneurs by personality characteristics. *J Small Bus* 18:11–18
- Ireland RD, Hitt MA, Sirmon DG (2003) A model of strategic entrepreneurship: the construct and its dimensions. *J Manag* 29:963–989
- Johnson B R (1990) Toward a multidimensional model of entrepreneurship: the case of achievement motivation and the entrepreneur. *Entrep Theory Pract* 39–54
- Julien PA, Marchesnay M (1996) *L'entrepreneuriat*. Economica, Paris
- Kark R, Van Dick D (2007) Motivation to lead, motivation to follow: the role of the self-regulation focus in leadership process. *Acad Manag Rev* 32:500–528
- Kets de Vries MFR (1977) The entrepreneurial personality: A person at the crossroads. *J Manag Stud* 14
- Kihlstrom RE, Laffont JJ (1979) A general equilibrium entrepreneurial theory of firm formation based on risk aversion. *The Journal of Political Economy* 719–748
- Knight RM (1987) Can business schools produce entrepreneurs? In: Churchill NC, Homaday JA, Kirchoff BA, Krasner OJ, Vesper KH (eds) *Frontiers of entrepreneurship research*. Babson College, Wellesley
- Koh HC (1996) Testing hypotheses of entrepreneurial characteristics: a study of Hong Kong MBA students. *J Man Psychol* 11:12–25
- Korunka C, Frank H, Lueger M, Mugler J (2003) The entrepreneurial personality in the context of resources, environment, and the startup process—a configurational approach. *Entrepren Theory Pract* 28:23–42
- Krueger NF (2007) What lies beneath? The experiential essence of entrepreneurial thinking. *Entrepren Theor Pract* 31:123–138
- Krueger NF, Reilly MD, Carsrud AL (2000) Competing models of entrepreneurial intentions. *J Bus Venturing* 15:411–432
- Kuratko DF, Hodgetts RM (1995) *Entrepreneurship*. Dryden Press, Fort Worth
- Kuratko DF, Ireland R, Covin R, Hornsby J (2005) A model of middle-level managers' entrepreneurial behavior. *Entrepren Theor Pract* 29:699–716
- Lafuente A, Salas V (1989) Types of entrepreneurs and firms: the case of new Spanish firms. *Strat Manag J* 10
- Lao RC (1970) Internal-external control and competent and innovative behavior among Negro college students. *J Pers Soc Psychol* 14:263
- Laufer JC (1975) Comment on devient entrepreneur. *Revue française de gestion* 18–29
- Learned KE (1992) What happened before the organization? A model of organization formation. *Entrepren Theor Pract* 17:39–48
- Lee DY, Tsang EWK (2001) The effects of entrepreneurial personality, background and network activities on venture growth. *J Manag Stud* 38:538–602
- Lee J (1997) The motivation of women entrepreneurs in Singapore. *J Entrepren Behav Res* 3:93–110
- Locke EA, Latham GP (1990) *A theory of goal setting and task performance*. Prentice Hall, Englewood Cliffs
- Louart P (1997) Motivation. In: Simon Y, Joffre P (eds) *Encyclopédie de gestion*. 2nd edn. Paris Economica
- Low MB, Macmillan JC (1988) Entrepreneurship: past research and future challenges. *J Manag* 35:139–161
- Man TWY, Lau T, Chan KF (2008) Home-grown and abroad-bred entrepreneurs in China: a study of influences of external context on entrepreneurial competencies. *J Enterp Cult* 16:113–132
- Marchesnay (1998) Confidence and Types of Entrepreneurs. In: Pleitner HJ (ed) *Renaissance of SMEs in a globalized economy*. Verlag KMU/HSG, M. St-Gall, pp 545–556
- Mc Ghee PE, Crandall VC (1968) Beliefs in internal-external control of reinforcements and academic performance. *Child Dev* 91–102
- McClelland DC (1961) *The achieving society*. The Free Press, New York
- Miles R, Snow CC (1978) *Organization strategy, structure and process*. McGraw-Hill, New York
- Miller D, Friesen PH (1982) Innovation in conservative and entrepreneurial firms: two models of strategic momentum. *Strategic Manag J* 3:1–125
- Miller D, Kets de Vries MR, Toulouse JM (1982) Top executive locus of control and its relationship to strategy-making, structure, and environment. *Acad Manag J* 25:237–253
- Miner JB, Raju NS (2004) Risk propensity differences between managers and entrepreneurs and between low- and high-growth entrepreneurs: a reply in a more conservative vein. *J Appl Psychol* 89:3–13
- Mintzberg H (1973) Strategy making in three modes. *Calif Manag Rev* 16:44–83
- Mitchell R, Busenitz L, Bird GC, McMullen J, Morse E, Smith B (2007) The central question in entrepreneurial cognition research 2007. *Entrepren Theor Pract* 31:1–28
- Mitton DG (1989) The complete entrepreneur. *Entrepren Theor Pract* 13:9–19
- Mueller SL, Thomas AS (2001) Culture and entrepreneurial potential: a nine country study of locus of control and innovativeness. *J Bus Venturing* 16:51–75

- Naffziger DW, Hornsby JS, Kuratko DF (1994) A proposed research model of entrepreneurial motivation. *Entrepren Theor Pract* 18:29–42
- Neider L (1987) A preliminary investigation of female entrepreneurs in Florida. *J Small Bus Manag* 25:22–29
- Palich LE, Bagby DR (1995) Using cognitive theory to explain entrepreneurial risk-taking: challenging conventional wisdom. *J Bus Venturing* 10:425–438
- Peterson RA (1994) A meta-analysis of Cronbach's coefficient alpha. *J Consumer Res* 381–391
- Rauch A, Frese M (2000) Psychological approaches to entrepreneurial success. A general model and an overview of findings. In: Cooper CL, Robertson IT (eds) *International review of industrial and organizational psychology*. Wiley, Chichester
- Robinson PB, Stimpson DV, Huefner JC, Hunt HK (1991) An attitude approach to the prediction of entrepreneurship. *Entrepren Theor Pract* 15:13–32
- Rotter JB (1966) Generalized expectancies for internal versus external control of reinforcement. *Psychol Monog Gen Applied* 80:609
- Runyan R, Droge C, Swinney J (2008) Entrepreneurial orientation versus small business orientation: what are their relationships to firm performance? *J Small Bus Manag* 46:567–588
- Ryakov T, Marcoulides GA (2000) A first course in structural equation modeling. Erlbaum, Mahwah, NJ
- Schere J (1982) Year. Tolerance of ambiguity as a discriminating variable between entrepreneurs and managers. In: *Academy of Management Best Paper Proceedings* 404–408
- Schindehutte M, Morris M, Allen J (2006) Beyond achievement: entrepreneurship as extreme experience. *Small Bus Econ* 27:349–368
- Schumpeter JA (1965) Economic theory and entrepreneurial history. In: HG A (ed) *Explorations in enterprise*. Harvard University Press, Cambridge
- Segal G, Borgia D, Schoenfeld J (2005) The motivation to become an entrepreneur. *Int J Entrepreneurial Behav Res* 11:42–57
- Sexton D, Bowman N (1986) Validation of a personality index: comparative psychological characteristics analysis of female entrepreneurs, managers, entrepreneurship students, and business students. Babson College, Wellesley
- Shane S (2005) A general theory of entrepreneurship: the individual-opportunity nexus. Elgar, Cheltenham
- Shane S, Locke E, Collins C (2003) Entrepreneurial motivation. *Hum Resource Manag Review* 13:257–279
- Shapero A (1977) The displaced, uncomfortable entrepreneur. *Psychol Today* 9:83–88
- Shapero A (1984) The entrepreneurial event. In: Kent CA (ed) *The environment for entrepreneurship*. Lexington, Lexington Books
- Steel P, König C (2006) Integrating theories of motivation. *Acad Manag Rev* 31:889–891
- Stevenson HH, Gumpert DE (1985) The heart of entrepreneurship. Harvard Business
- Stewart W, Roth P (2001) Risk propensity differences between entrepreneurs and managers: a meta-analytic review. *J Appl Psychol* 86:145–153
- Stewart WH, Carland JC, Carland JW, Watson WE, Sweo R (2003) Entrepreneurial dispositions and goal orientations: a comparative exploration of United States and Russian entrepreneurs. *J Small Bus Manag* 41:27–46
- Stewart WH, Roth PL (2004) Data quality affects meta-analytic conclusions: a response to Miner and Raju. *J Appl Psychol* 89:14–21
- Stewart WH, Roth PL (2007) A meta analysis of achievement motivation differences between entrepreneurs and managers. *J Small Bus Manag* 45:401–421
- Tajeddini K, Mueller S (2009) Entrepreneurial characteristics in Switzerland and the UK: a comparative study of techno-entrepreneurs. *J Int Entrepren* 7:1–25
- Timmons J (1989) *The entrepreneurial mind*. Brick House, Andover
- Townsend DM, Busenitz LW, Arthurs JD (2010) To start or not to start: outcome and ability expectations in the decision to start a new venture. *J Bus Venturing* 25:192–202
- Turan M, Kara A (2007) An exploratory study of characteristics and attributes of Turkish entrepreneurs: a cross-country comparison to Irish entrepreneurs. *J Int Entrep* 5:25–46
- Tversky A, Kahneman D (1992) Advances in prospect theory: cumulative representation of uncertainty. *J Risk Uncertainty* 5:297–323
- Venkatapathy R (1984) Locus of control among entrepreneurs: a review. *Psychol Studies* 29:97–100
- Verstraete T, Jouison-Laffitte E (2009) *Business model pour entreprendre. Le modèle GRP: théorie et pratique, petites entreprises & entrepreneuriat*. De Boeck, Paris
- Vesper KH (1980) *New venture strategies*. Englewood Cliffs, Prentice Hall
- Vroom VH (1964) *Work and motivation*. Wiley, New York
- Wiklund J, Patzelt H, Shepherd D (2009) Building an integrative model of small business growth. *Small Bus Econ* 32:351–374
- Woo CY, Cooper AC, Dunkelberg WC (1991) The development and interpretation of entrepreneurial typologies. *J Bus Venturing* 6:93–114