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## **Project manager's characteristics influence in the entrepreneurial process: A project-based entrepreneurship model**

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### Abstract

#### Introduction

No one has yet been able to identify which are the unique assumptions and theories of entrepreneurship (Shane, 2012) thus there is an opportunity window to continue contributing to this field by using different and non-conventional ideas. As Shane (2003) mentioned almost a decade ago, the tradition of classical authors in entrepreneurship is to consider an interdisciplinary perspective. As this tradition has not radically changed, I join this trend by integrating project management views into the entrepreneurial process to propose a conceptual framework, which in turn provides some propositions that could be researched empirically.

#### State of the art

Individual characteristics have been researched extensively in the past to try explaining their different effects and outcomes. Fields as leadership, strategic management, psychology, and entrepreneurship have studied the influence of personality traits and competences of individuals in a variety of roles, from top managers and leaders, to entrepreneurs and project managers. Although entrepreneurs have distinctive traits portrayed in literature it is possible to find several studies focusing on related characteristics from project managers. This intersection of studies may suggest entrepreneurship and project management could enhance more the research of each other. Lindgren and Packendorff (2003) noticed a similar opportunity in their project-based view of entrepreneurship where they argue in favor of considering entrepreneurial acts as temporary series of events with time-limited and team action, which in consequence entrepreneurial acts could be analyzed, and research in term of projects.

#### Research Gap

As the project-based view of entrepreneurship (Lindgren & Packendorff, 2003), where a project metaphor is used to postulate how the entrepreneurial process should be researched from a different perspective, has been under researched there is an opportunity to extend and prove its assumptions. One way to start closing the research gap

between project management and entrepreneurship is contributing to the debate of project-based entrepreneurship by situating individual's characteristics as an important element influencing some steps of the entrepreneurial process.

#### Theoretical arguments

It is a common view nowadays that individuals should not be the only cause to explain entrepreneurship or that the core of entrepreneurship studies should not be on studying only unique characteristics from entrepreneurs. However irrespectively of the approach taken to study this field, it is difficult to neglect that entrepreneurship heart lies between individuals and opportunities (S. Shane, 2012; Scott Shane, 2003) thus recognizing that the characteristics of people involved in entrepreneurial acts in different contexts should continue to be researched. Moreover, given that in the real world an entrepreneur may need several of the characteristics that a project manager has in order to implement a project or create a venture, a framework should be created to probe the outcomes that these characteristics may influence. One main assumption in the framework is to focus on the influence of project management characteristics on the entrepreneur's capacity to exploit an entrepreneurial act due that a project manager could be seen as an 'expert' in exploiting opportunities (projects) rather than an a specialist on discovering them.

#### Method

The method in this paper used to achieve its purpose is through a literature review of different disciplines. By discussing some of this literature and with an inductive approach, the author conceptualizes some logic connections to propose a conceptual model to trigger further research.

#### Results

The outcome of this paper is to suggest a project-based entrepreneurship model that shows the influence and relationships of project management characteristics in the entrepreneurial process. This conceptual model proposes relationships between project manager's characteristics and the capacity of an entrepreneur to exploit entrepreneurial opportunities to later influence entrepreneurial acts but also entrepreneurial outcomes. As well it proposes that the nature of the opportunity moderates the relationship between project manager's characteristics and the entrepreneur's exploitation capacity.

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# Project manager's characteristics influence in the entrepreneurial process: A project-based entrepreneurship model

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**Abstract.** Although real life entrepreneurs are constantly involved in projects and therefore many times they use project management practices, approaches and competences to pursue entrepreneurial opportunities, to date research studying the overlap of disciplines as entrepreneurship and project management have been undervalued. The aim of this paper is to suggest that there could be a possibility to increase theory and research on one field with support of the other. To based this viewpoint I revisit the ideas from already proposed but under researched perspectives on the study of entrepreneurship applying a project-based approach. This project-based movement in entrepreneurship gives support to consider some assumptions on how project management elements could fit and have a direct effect in the entrepreneurial process. Based on these assumptions, the purpose of this paper is to propose a conceptual model that emphasizes the different influence of project manager's characteristics exhibited by entrepreneurs on distinctive steps of the entrepreneurial process i.e. more influence on opportunity exploitation rather than opportunity discovery. Moreover as some project manager's characteristics like competences are more related to the type of project to be undertaken the nature of an opportunity, also seen as the nature of an entrepreneurial project, could have a moderator effect on the opportunity exploitation capacity of an entrepreneur. These relationships depicted in the model imply five propositions that are explained and that could be research empirically in the future. The main contribution of this paper is to propose a framework for future research on the entrepreneurial process from a project management-centred perspective in order to unbound and extend studies in the entrepreneurship field.

**Keywords:** project-based entrepreneurship; entrepreneurial opportunity; project manager's competences; opportunity exploitation.

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## 1. Introduction

No one has yet been able to identify which are the unique assumptions and theories of entrepreneurship (Shane, 2012) thus there is an opportunity window to continue contributing to this field by using different and non-conventional ideas. As Shane (2003) mentioned almost a decade ago, the tradition of classical authors in entrepreneurship is to consider an interdisciplinary perspective. As this tradition has not radically changed, I join this trend by integrating project management views into the entrepreneurial process to propose a conceptual framework that could be researched empirically. The motivation to do this is based on the general observation that while entrepreneurs in real contexts are very different from project managers in large companies, both of these group of individuals deal with unique temporary endeavours restricted to time, scope and resources i.e. projects. Therefore if considering a project-based view of entrepreneurship there is the possibility to focus the research on some elements of project management that could support theory within the entrepreneurship field.

There is a long list of project management elements to consider (e.g. people, process, structure, procedures, tools and techniques) nevertheless this paper focuses only in the individual characteristics that entrepreneurs may share with project managers. A research context in which these two roles are framed together could raise several theoretical and practical critics by people arguing that project managers could not be compared with entrepreneurs and conversely. This could be the case if the individual is used as the unit of analysis and a strict human agent-centred perspective is deemed. However if entrepreneurial opportunities and projects are considered as unit of analysis a more flexible view focusing on some steps of the entrepreneurial process could be more reasonable to study.

In order to introduce the notion of projects into the entrepreneurial process I revisit some proposed entrepreneurship views that either explicitly encourage the use of a project-based view (Lindgren & Packendorff, 2003) or acknowledge the importance of considering projects in entrepreneurship (Casson & Wadeson, 2007; Fayolle, 2003). All these approaches support the use of entrepreneurial acts, entrepreneurial projects and entrepreneurial opportunities to be considered in entrepreneurship research with the difference that some of them emphasize venture creation as the project outcome. But even if the scope or the final effect of these constructs differ between each other, a common denominator could be assumed as entrepreneurial opportunities and acts could be similar to projects i.e. unique, complex undertakings subjects to limitations in terms of resources, time and quality (Packendorff, 1995). In turn, the idea of a similitud between the entrepreneurial process (or at least some stages of it) with a project could justify the inclusion of project manager's characteristics into an adapted entrepreneurial process model.

To do this in a clearer way, I suggest that individual characteristics from project managers i.e. competences and personality traits, may influence with a distinct relationship the exploitation and the discovery of entrepreneurial opportunities and projects. The logic under these assumptions comes from the general notion that a project manger could be seen as an 'expert' in exploiting different types of opportunities or projects, rather than a specialist on discovering them. Additionally, considering that project managers could be involved in a wide variety of projects, triggers the idea that the nature of the opportunity or the type of project may impact the kind of project manager's characteristics that are needed, thus a universalistic approach to manage entrepreneurial opportunities or projects might not seem appropriate. This is sustained by previous studies showing that different types of projects should be managed in different types of ways (Dvir, Sadeh, & Malach-Pines, 2006) and probably also by different types of people. This would imply that if the idea of exploiting certain types of projects is being considered in the entrepreneurial process then the idea of using certain project manager's characteristics to do so could be also possible.

Just as Lindgren and Packendorff (2011) mention, it is not my goal to put inside the entrepreneurial process the complete project management toolbox. Instead my goal is to understand the extent that project management influences and supports the exploitation of entrepreneurial opportunities and projects and consequently understand if by using a project-based view of entrepreneurship individuals could better achieve certain types of ventures. Therefore the main purpose of this paper is to propose a project-based entrepreneurship model that shows the influence and relationships of project manager's characteristics in the entrepreneurial process.

The rest of this paper is organized as follows. In section 2 I present a brief literature review, which first shows definition and general research of personality traits to later drive the attention of these individual characteristics on the literature of entrepreneurship and project management fields. The same approach is followed to review some of the literature related with competences. At the end of this section the perspectives of project-based entrepreneurship such as entrepreneurial actions and projects. Later on in section 3 in the discussion the attention is driven towards the inclusion of project manager's characteristics in the entrepreneurial process and thus I propose a conceptual model that shows clearly the relationships together with five propositions. Finally in section 5 some conclusions including the suggestion of empirically research the propositions from the conceptual model are presented in order to support the use of project-based entrepreneurship as a mean to understand better how project management and entrepreneurship balance and enrich each other, which in turn could extend knowledge to close research gaps in both fields.

## **2. Literature Review**

Individual characteristics have been researched extensively in the past to try explaining their different effects and outcomes. Fields as leadership, strategic management, psychology, and entrepreneurship have studied the influence of personality traits and competences of individuals in a variety of roles, from top managers and leaders, to entrepreneurs and project managers. Although entrepreneurs have distinctive traits portrayed in literature it is possible to find several studies focusing on related characteristics from project managers. This intersection of studies may suggest entrepreneurship and project management could enhance more the research of each other.

### **2.1 Personality Traits**

The meaning of the word 'trait' is usually considered as habitual patterns of behaviours, thoughts, emotions and attitudes inherent to a person nature. According to this, it is expected that traits differ across individuals and most of them are relative stable over time. The central idea of the trait meaning is that it is commonly seen as a distinguishing characteristic of the nature of an individual, which can also be inherited. There is a nearly unlimited number of potential characteristics that could be used to describe personality and even experts as psychologists have identified countless traits that distinguish individuals from one another (Toegel & Barsoux, 2012). Different researchers have suggested models to cluster the traits that are reliably correlated. Some suggest that personality is reducible to three major traits and other argues that much more are needed to adequately describe human personality including characteristics as humour, wealth and beauty (Saucier & Goldberg, 1998). But research in recent years has converged toward five broad dimensions, each including a group of traits that account for the majority of the differences among individual personalities.

These 'Big Five' were proposed by Costa Jr. and McCrae in 1985 with the help of statistical technique or factor analysis and since then have proved a rich conceptual framework for integrating diverse research findings and theory in personality psychology. The Big Five relates to the five fundamental factors of personality: Openness, Conscientiousness, Extraversion, Agreeableness and Need for stability. Although the last factor is mentioned with different names like Neuroticism (Brandstätter, 2011), Need for Stability (Toegel & Barsoux, 2012) or Emotional Stability (Larsson, 2012) by different authors, all of them related to the same degree in which a person copes with stress, setbacks and uncertainty. The important idea to consider when talking about personality traits research is that while most of the studies have agreed to depart from the same common ground i.e. the Big Five, the way in which researchers from each field test them (e.g. manager vs. leader, or manager vs. entrepreneur) and focus on the outcomes they influence (e.g. effective organizational performance or new venture success) can be very diverse. Consequently it is interesting to take a look of how the fields of entrepreneurship and project management have advanced personality traits research.

#### *2.1.1 Personality Traits of Entrepreneurs*

By searching into the literature it can be seen that even when people had accepted entrepreneurship as a different phenomena over time, looking for personality traits as unique characteristics of entrepreneurs was occasionally the topic of research. There were even researchers discrediting this idea and proposing that more productive research into entrepreneurship could result from shifting the unit of analysis from the individual level to the functional level (Gartner, 1988). However according to Zhao et al. (2010) research on this topic gained new momentum in the 90s with the increasing acceptance of the Big Five and by the use of meta-analysis as a technique for generalizing the results

of different studies. Some of these meta-analyses have confirmed entrepreneur's personality important influence on entrepreneurial intentions, performance, business creation and new firm success. For example, Rauch and Frese (2007) conducted a comprehensive analysis of entrepreneurs' personality traits including a comparison with a full set of personality predictors for both start-up activities as well as success. They noted that some traits such as tenacity or passion for work, have not been studied enough to be able to include them into the meta-analyses. They conclude that traits matched to the task of running a business produced higher effect sizes with business creation than traits that were not matched to the task of running an enterprise. The traits matched to entrepreneurship significantly correlated with entrepreneurial behaviour, i.e. business creation, and business success, were need for achievement, generalized self-efficacy, innovativeness, stress tolerance, need for autonomy, and proactive personality.

In a more recent meta-analysis Zhao et al. (2010) examined the relationship of personality to outcomes associated with two different stages of the entrepreneurial process: entrepreneurial intentions and entrepreneurial performance. Instead of creating a vast list of entrepreneurs' traits studied so far, they use a broad range of personality scales to categorize into a set of constructs using the Five Factor Model. They noticed that some personality constructs couldn't be assigned only to one of the Big Five, being the most important and yet controversial one, the construct of risk propensity. One justification is to see risk propensity as a compound personality trait reflecting a specific combination of scores on all five dimensions of personality (i.e. high extraversion, openness, and emotional stability combined with low agreeableness and low conscientiousness). Their results show that four of the Big Five personality dimensions were positive correlated in different degrees to entrepreneurial performance, while agreeableness failing to be associated. They conclude that while risk is positively associated with entrepreneurial intentions, it is not related to entrepreneurial performance. Therefore emphasizing the importance of conscientiousness, emotional stability, and openness and not so much extraversion or risk propensity influencing the emergence and success of entrepreneurs.

Although the great amount of literature on the topic of entrepreneurs and its personality is evident with the existence of the previously mentioned meta-analyses, further research is encouraged due to its potential of continue explaining the entrepreneurial process and the entrepreneurs nature. For example, Brandstätter (2011) points out that personality traits studies usually neglect or overlook the mental and behavioural processes by which entrepreneurs' attributes such as motives, abilities, and attitudes influence entrepreneurial behaviour e.g. start-up decisions, and its associated behaviour results e.g. success of the enterprise. On his review of five meta-analyses of personality aspects of entrepreneurship that he conducted, he presents four highlights.

- 1) When using the system of the Big Five, personality traits make a difference on predicting entrepreneurial intention and entrepreneurs' performance, even when entrepreneurs are compared with managers.
- 2) Other more specific scales that have been frequently used and therefore could be included in meta-analyses have also been reported significant correlations with business creation and business success. Examples of these are readiness for innovation, proactive personality, generalized self-efficacy, stress tolerance, need for autonomy and locus of control.
- 3) Risk propensity supports business foundation, but not necessarily business success.
- 4) Achievement motivation is favourable both, for business foundation and business success.

He concludes that research on how personality characteristics influence business set-up and success should continue to provide more counselling to entrepreneurs and the efficiency of business support.

### 2.1.2 Personality Traits of Project Managers

Although very few researchers have focused on investigating the influence of personality traits in project managers' performance, project performance and project success, three studies centring on this topic have been available in the last couple of years. The first researchers to study the relationship between project managers personality, project types and project success were Dvir et al (2006). In their study the hypothesis is that the fit between project managers' personality and management style and the types of projects they manage is crucial for projects' success. They state that the universalistic approach that assumes that all projects are similar, as the guide to the Project Management Body of Knowledge promotes, may not be optimal for managing projects. By combining the disciplines of project management and personality psychology, they propose using the theory of person-organization fit to explore the idea of project managers being attracted to projects that fit their personality.

They argue that as no single personality construct apply to the classifications of projects dimensions - NCTP - that they use, they combine different personality dimensions and their measures that seemed relevant. Based on this, Novelty dimension is related to openness to experiences, Complexity component is address by two traits, inventor and enterprising personality, Technological uncertainty is related to risk-taking tendency, and Pace is addressed by the trait Type A Behaviour (driven individual who feels oppressed by time). Other types of personality that they looked for significant correlations were: intuition, perceiving, introversion, investigative, secure, avoidant, anxious-ambivalent and rebellious dreamer. They conclude that the study's results lend tentative support to their hypothesis, which it is fairly expected for an exploratory study on such complex relationships.

Another study by Dolfi & Andrews (2007) looks at the optimism of project managers and whether optimism, innate or learned, would allow project managers to overcome the impediments associated with the work environment. Their argument is that in spite of the ever-present impediments to success in projects, project managers seem to thrive and continue to enter the ranks of the profession in increasing numbers. They ponder whether there is something in the personality of project managers that makes them especially well suited for the chaotic and unpredictable work environment, and if yes what are these innate talents or skills. By reviewing literature they claim that indeed there may be an overriding personality characteristic that allows project managers to work more efficiently in their work environment, which is *optimism*.

They concluded this by looking into how previous researchers in some way linked the Big Five personality traits and the overlapping with the Myers-Briggs Type Indicator (MBTI) to classify personality types. The MBTI developed by Katherine Briggs and her daughter Isabel Myers in the 40's is a test that classifies the dichotomies of: *extraversion and introversion; sensing and intuition; thinking and feeling, and judging and perceiving*. Their conclusions on the exploratory research are that it demonstrated that optimism in project managers is an important attribute and that tenure of experience in the work environment can affect the level of optimism. Likewise, they conclude and suggest that as they did not equate optimism with project success nor project type, or with positive or negative working environments, it could be further researched.

Similar arguments on personality traits and project managers exist. One by researchers Shenhar and Wideman relating to the match of project manager style with project type for optimum success, and other from a researcher Smith related to the effects of project manager personality profiles on projects; however these are neither available free nor officially published.

## 2.2 Competences

The word '*competence*' could be tricky to define as it encompasses a broad set of other terms in order to explain its connotation and scope. Even though considerable research on this topic has been conducted in the past 30 years, due to its several uses, it seems that a precise definition has not been reached (Robinson, Sparrow, Clegg, & Birdi, 2007). However it seems that from most definitions widely accepted two common aspects exist, the emphasis on the competence to meet a specific goal, and the notions of knowledge or skills. It is important to emphasize the later one due to the idea that knowledge and skills are acquired through time and could be improved, in contrast to others characteristics that individuals may not develop. This can be exemplified by considering synonyms for competence such ability, capacity, capability, qualification and skill, which all of them are also related to the notion of having the potential to be taught, trained and developed through time.

One of the first academicians to use the concept of competence and its dimensions was Lundberg (1972) when he proposed a scheme to design and assess programs for executive roles. Another researcher writing a seminal work is McClelland (1973) who established the standard to narrow competences research primarily to individuals and use less biased samples and variables e.g. gender, race or socioeconomic factors, to predict people's performance. Almost a decade later Boyatzis (1982) proposed a broad but popular definition referring to competence as an underlying characteristic of a person that causes superior or effective performance in a job. So even if more studies on competences and their models attracted researchers attention gradually, still there was a lack of a richer concept definition. This issue guided academicians like Collin (1989) to attempt to disentangle past confusions about the definition of competence by focusing on the epistemological, philosophical and methodological issues with the purpose of proposing a well-defined path for further studies.

In Boyatzis' book (1982) on competent managers, a model of individual competence for effective managers performance was introduced to explain the relationships between them and their effects. By 1991 research and conception of competency models propagated world wide and more than 100 researchers in 24 countries had contributed with 1,000 competence models for different jobs in industry, government, military, health care and education (Lyle M. Spencer, 1997). As later definitions of competences proposed research on team, process and organizational capabilities (Athey & Orth, 1999) it is probable that by now these numbers have probably duplicated but nevertheless ambiguity in the concept definition still exists. Robinson, et al. (2007) claim that in response to this lack of consensus a broad definition should be used to encompass most other definitions and with this eliminate the ambiguity of the term. They propose the use of the definition promoted by Spencer and Spencer (1993) which describes competence as any measurable characteristic of an individual that differentiates superior from average performance, which may include inter alia, motives, traits, self-concepts, knowledge and skills.

### 2.2.1 Competences of Entrepreneurs

When talking about entrepreneurs' competences it seems impossible to avoid the debate whether entrepreneurs are born or made. This dichotomy is important, as it has been stated above that competences have the potential to be taught, trained and developed. Henry, Hill, and Leitch, (2005) through conclude that entrepreneurship should be seen as an art and also as a science, with at least some elements that can be successfully taught. They remark there is a consensus that certainly some aspects associated with entrepreneurship can be boosted through training and education, thus a 'pro-competence development' inclination could be deduced from their ideas.

A recent empirical study that supports this statement is Klinger and Schündeln (2011) study that proves business training programs in Central America to increase significantly the students entrepreneurial activity and thus the probability that they will start a business or will be involved in a business expansion. Studies like this exemplify how entrepreneurs acquire and improve their knowledge and skills and thus emphasizing research efforts towards entrepreneurs' competences. Some researchers even state that entrepreneur's competences should be developed earlier than in the university studies phase. For example, according to Obschonka et al. (2011) entrepreneurial competence in adolescence has a positive effect on the development of the venture creation process. They suggest this early competence indicated by age-appropriate behaviours such as leadership, inventive behaviours, and commercial activities, may explain the entrepreneurial performance during the individual future working life.

Some of the most known studies related with entrepreneurs' characteristics in the 90s focus more on the individual with the label of founder but with the same idea of entrepreneurial features influence. For example, Chandler and Jansen (1992) research showed significant correlations between the founder's self-assessed entrepreneurial and managerial competences and the performance of start-up firms. Their study is based on research that identifies the entrepreneurial, managerial, and technical-functional functions as three roles that founders must competently display in order to be successful. Regarding entrepreneurial competences it include ability to recognize business opportunity as well as self-assessed proficiency in the entrepreneurial function. The managerial competences dimension includes organizational and interpersonal skills and it appears to be enhanced by business education and the years of general managerial experience. On the technical-functional level, it is required high knowledge that reflects on using specialized tools and procedures.

Further studies continued under the same line as Chandler and Hanks (1994) who examined the influence of the founder competences on venture performance. They focus on the moderating effect of two types of competences, managerial and entrepreneurial. Managerial competence involves abilities to lead, delegate, manage customer and employee relations and exercise interpersonal skills. Entrepreneurial competence primarily includes the ability to recognize and envision taking advantage of opportunities but also motivation skills and self-efficacy beliefs to mobilize resources. Their results indicate that both types of competences have moderating effects between the quality of the opportunity, resources capabilities and the venture performance.

Other types of analyses had continued since then with new conclusions but also confirming past results. More recently, Erikson's (2002) study found that the presence of a complementary relationship between entrepreneurial competence and commitment, in the sense that one without another are useless but together can have a multiplicative positive effect on enterprise generation and performance. He defines this multiplicative function as 'entrepreneurial capital', which one of its basic notions is the capacity to identify opportunities by increasing the perceived capability that an individual is entrepreneurially capable. He confirms the idea previously suggested by other researchers (Krueger Jr. & Dickson, 1994) that the positive entrepreneurial self-perception of the individual is translated to be more alert and sensitive to opportunities.

### *2.2.2 Competences of Project Managers*

A major concern of the field of project management and a recurring theme in the literature is that of project success and the factors that contribute to it. Closely associated with this is the concern of competence of project managers (L. Crawford, 2000). This concern has driven the interest in the

development of standards and certification processes that can be used for assessment and as a guide for development of project management competence. A classic view when discussing about project manager competences is to refer to the PM standards as the PMBOK handbook, the IPMA's Competence Baseline, and the APMBOK. According to Crawford (ibid) some attempt has been made in the standards to identify personal characteristics of effective project managers but this has played only a minor role, with the major attention being given to required knowledge and skills rather than personality characteristics and behaviours.

In line with the PM standards idea to review project managers competences, there are three widely accepted Project Management Knowledge Standards: PMBOK from the Project Management Institute, IPMA Competence Baseline from the International Project Management Association, and the APMBOK from the Association for Project Management in the UK. Of these, the PMBOK® Guide is the most widely recognized and accepted, with nearly 300,000 copies distributed worldwide (L. Crawford, 2000). However it would be impossible to synthesize these 3 standards on few paragraphs. Thus to see which types of competences these standards promote another brief but with equally inclusive handbook could serve as a proxy. One option could be to consider the project management skills, abilities and behaviours like the ones compiled in the National Competence Baseline for Scandinavia (Association of Danish Project Management, 2010). According to this handbook project managers' competencies covers 3 abilities which are: A) to perform *leadership behaviour* adequate to each situation, B) to *apply methods* utilizing both knowledge and experience and C) to learn from managing projects and *apply the experience*.

Different to the practitioners view, in an comprehensive paper Crawford (2000) presents a review of research based literature concerning the criteria by which project success is judged, the factors that contribute to the success of projects; and the knowledge, skills and personal attributes of project managers that are expected to lead to achievement of successful project outcomes. He also conducted an analysis on the literature of project managers' competences where twenty-four categories or concepts emerged which are directly related to the knowledge, skills and personal attributes identified as important to effective project management performance. Among the most mentioned competences within the literature are: Leadership, Planning, Team Development, Strategic Direction, Technical Performance, Monitoring & Controlling, Communication, Decision Making & Problem Solving, Stakeholder Management, Organization Structure and Project Definition.

Later on with a similar approach, Crawford (2005) explores the relationship between performance against standards and the effectiveness of project management performance in the workplace as perceived by senior managers. His results provide support for suggesting that there is senior management resistance to project manager involvement in practices that relate to strategy, project definition, project integration and communication. Others researchers have proven the relevance of similar types of skills and knowledge required by project managers but in different contexts. One example is El-Sabaa, (2001) who considers two types of skills categorizations in his study, one from the project management literature and the other from administration literature. According to this the skills needed for a project manager can be categorized into six skill areas: communication, organizational, team building, leadership, coping, and technological skills. Similarly, effective administration rests on three basic developable skills. These are human skill, conceptual skill and technical skill and although these skills are interrelated, they can be developed independently.

Another example in the IT sector is from Stevenson & Starkweather (2010) whose research focuses on investigating the human characteristics necessary to achieve project success, through identifying and

rating preferred IT project management competencies. Their results identified six critical core competences: leadership, the ability to communicate at multiple levels, verbal and written skills, attitude and the ability to deal with ambiguity and change. They conclude that all these were important characteristics to successful project management however in IT projects soft skills are the most preferred ones.

Based on the frequent citation of leadership as a core competence required by individuals in project management roles, an approach to review some studies that have focused on its interrelated constructs and effects could be considered. For example, after a substantial review of the literature on leadership competences, Dulewicz and Higgs (2003) identified fifteen features that influence leadership performance. They group the competences into three competence types, which they call intellectual (IQ), managerial (MQ) and emotional (EQ). In the stream of emphasizing the relevance of emotional intelligence (EQ) as a competence, some researchers have focused its research efforts to study it on project managers. This is the case of studies such as Clarke (2010) who focused on the theory on how to design a program to train emotional intelligence in project managers. Others researchers like Müller & Turner (2007, 2010) identified the correlations between success and project managers' leadership competences, using a composite measure of project success. Their results have shown that the manager's leadership style influences the performance of their organization and different leadership styles are appropriate in different contexts.

A fairly new competence construct found on PM literature is the so-called Spiritual Intelligence (SQ). Howard, Guramatunhu-Mudiwa, & White (2009: p. 2) define spiritual intelligence as "an interconnected configuration of affective orientations intimately linked to create meaning through connecting ideas, events, and persons rather than to a specific religious tradition or orientation". While SQ started and has been widely used as a term in fields like psychology, theology, health and other natural sciences, there are also some advocates for its use in social sciences and more specifically in project management. For example, Thomas & Mengel (2008) proposed a conceptual model that proposes the desired knowledge to educate project managers to cope with complexity. They state that current training and education do not give Project Managers the proper skills, abilities and leadership competences, so needed nowadays. They urge on the need "to develop emotional and spiritual intelligent project managers capable of building relationships effectively and of helping create meaningful project environments" (2008: p. 309).

### **2.3 Project-based perspectives of entrepreneurship**

The research literature considering the combination of the fields of project management and entrepreneurship is relatively new. Nevertheless there is some literature centring more on studying project management tools and techniques inside new and small-medium firms rather than trying to combine theoretical constructs and assumptions from both fields. Some of the authors contributing to the first group of literature are Dean (1986) who suggested the use of a project-management approach as a "systemic discipline" used to manage innovation inside start-up firms. Murphy and Ledwith (2007) examined the project management practices used in high-technology SMEs and concluded that the existence of a project manager and the practice of project planning significantly contribute to project success. Likewise to this approach Turner, Ledwith and Kelly (2009, 2010, 2012) focus on finding the extent to which SMEs use project management tools and the role of project managers in managing innovation according to the size and nature of the firms however they focus more on evaluating just the tools and techniques.

The second group of literature focuses on considering a wider and different view of metaphors and assumptions between projects and entrepreneurship. Two views focusing on this idea are included in the book “New Movement in Entrepreneurship” edited by Steyaert and Hjorth (2003) who pointed out that one of the four key movements in the academic field of entrepreneurship is the project-based one.

The first one is proposed by Lindgren and Packendorff (2003) on their project-based view of entrepreneurship by seeing entrepreneurship itself as a phenomenon constantly emerging through series of social events and thus focuses on organizing entrepreneurial acts as social constructions. As these *entrepreneurial acts are temporary by nature*, in consequence means *that they can be analyzed and researched in term of projects*. One example of this idea is when start-ups have completed the emergent stage and the explorative process has been reached, their main process and activities would be standardized/organized to be exploited further as the operations of an established firm. So even if it is not easy to say exactly when does an entrepreneurial act has concluded, it does have an end. This could be when the act or its outcome has gained acceptance and is not considered as a variance in the cultural context anymore or when the actors have solve all the matters that built the entrepreneurial act itself (Lindgren & Packendorff, 2011). Another view from these authors is that the act is over when the market has been reached and the results diffuses into the context for further exploitation.

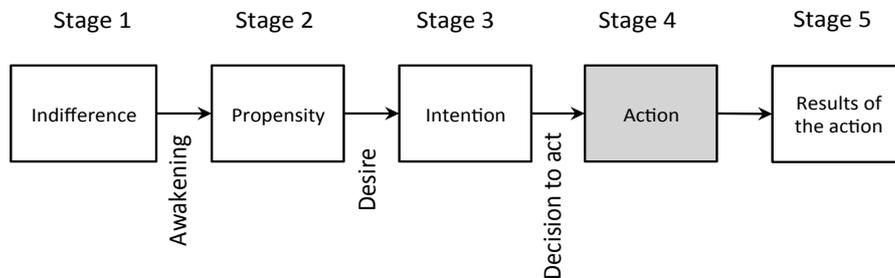
The authors provide some clear assumptions about their project-based view and some of there are: 1) *Entrepreneurship should be studied in terms of temporary entrepreneurial acts and people related to them*, setting aside the idea that start-ups are the main results of these types of acts; 2) *entrepreneurial acts occur in a series over the life paths of individuals*, meaning that there are series of acts rather than single ones and that other actors could be involved throughout these series; 3) the idea that between *entrepreneurial process could be seen as time-limited and team-acted series of events*; and 4) as the authors mentioned that these series of events are not predictable and controllable but rather continuous interactions that may take different directions, *entrepreneurial processes can be seen as discontinuous, noticeable and disaggregated series of events involving actors restricted to time, scope and social involvement*.

It is important to remark that one important argument that Lindgren and Packendorff (2003) mention on their project-based metaphor is that as entrepreneurial acts happen in all sectors of society, the idea of an act of this nature should not be exemplified only by the start-ups of firms. They assert that entrepreneurial acts may happen inside established organizations, in institutions, universities, voluntary associations and subgroups of society. Moreover both academics support the idea that not only acts formally called projects should be of interest if considered a project-based perspective, but all the entrepreneurial acts in the form of temporary sequences of action could be also important to study. They argue (Lindgren & Packendorff, 2003, 2011) that studying entrepreneurship as temporary organizing process provides entrepreneurship studies with a much needed temporal aspect lacking so far in most of the entrepreneurship frameworks proposed.

The second project-based perspective is presented by Fayolle (2003) who proposes that entrepreneurship relates to the support for the creation of value which can be defined by a project for the creation of an activity or firm, the development of a product or innovation, or the acquisition of a firm or activity. Therefore, he mentions that the project is ‘organizing’ by its nature as well as it is an act of organization and that the project fits into a suitable, social, cultural and economic environment. Besides mentioning the idea of entrepreneurial projects, Fayolle makes a clear distinction between opportunity, act and project, which is visible in the two entrepreneurial life cycles shown in Figure 1. He argues that because entrepreneurship research is marked by a lack of continuity, researchers should

not focus either on an opportunity or project but rather on a construct he proposes as ‘entrepreneurial situation’. As this term is not mentioned constantly in further literature, it is secondary to review of this literature. The emphasis should be in the treatment that he uses of entrepreneurial projects, opportunities and actions within the entrepreneurial process.

a) Stages of individual progression towards entrepreneurship



b) Progression stages from an idea to an entrepreneurial organization.

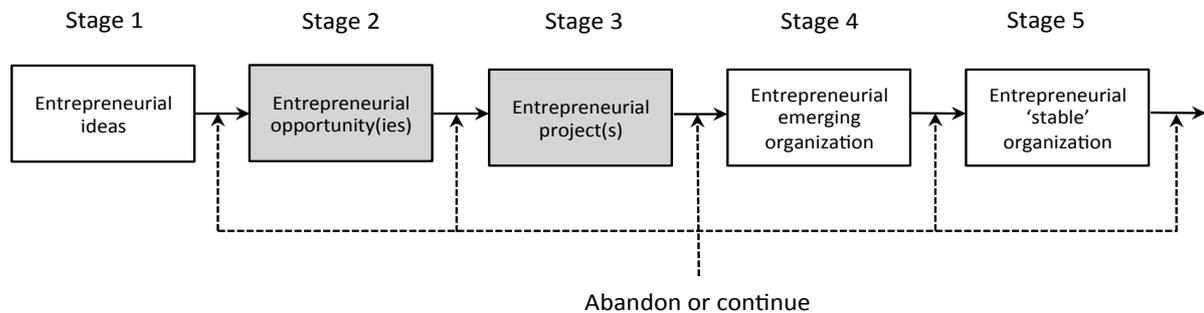


Figure 1. Two entrepreneurial process including projects, acts and opportunities

Another view considering formally the concept of projects within the field of entrepreneurship is provided by Casson and Wadeson (2007). They argue that the concept of opportunity is closely related to the concept of a project because an opportunity is essentially a project that would prove beneficial if it were exploited or in their own words an opportunity is “*a potentially profitable but hitherto unexploited project*” (Casson & Wadeson, 2007; p. 286). Moreover in their view an opportunity is similar to a project because it involves a commitment of scarce resources like physical resources and time; and if the project is abandoned the resources and the associated expenditures will fall under sunk costs i.e. costs that cannot be recovered. Another distinction they made is that usually in entrepreneurship literature opportunities are related to activities rather than to projects. From these authors viewpoint activities do not have costs associated to conditions adjustment and thus they can easily move from one steady state to another, but a project involves a stock of a resources which are committed to a particular use over a considerable period of time. Thus their idea of relating the concept of entrepreneurial opportunities as temporary acts or events with limited resources could be potentially used in the suppositions by other authors within the entrepreneurship field.

### 2.3.1 Entrepreneurial opportunities, actions, acts and projects

In the project-base views of entrepreneurship reviewed above the distinction between opportunities, acts and projects undertaken by entrepreneurs or people engaged in entrepreneurship can be overlapping and confusing. This may occur due to synonyms and different definitions that each

authors chooses to use. This is not wrong as every author justifies her or his own choices on how to consider the essence of what entrepreneur or an entrepreneurial individual does. Just to name few examples, Schumpeter (1934) said that it is individuals who carry out entrepreneurial initiatives, which in turn modify existing industries. Shane and Venkataraman (2000;1997) well accepted definition of entrepreneurship uses the concept of opportunity. Casson and Wadeson (2007) argue in favour of not referring to activities in entrepreneurship but rather to projects. In a similar way Lindgren and Packendorff (2003) remark the use of entrepreneurial acts and they could be seen as projects for entrepreneurship research.

Likewise Klein & Foss (2008) mentions that research in the field of entrepreneurship should not use the notion of opportunities as the element that is being exploited but the element under study should be actions. They argue that a way to focus on the actions could be to consider entrepreneurial actions as projects based on Casson and Wadeson project notion. The notion of entrepreneurial projects has been mentioned since almost 3 decades ago by Burgelman (1983) but he mentions entrepreneurial projects in the context of large, complex organizations. An as we have seen above Fayolle (2003) makes a distinction between entrepreneurial opportunities, actions and projects and proposes a more encompassing construct of entrepreneurial situation. This shows that while entrepreneurial opportunities, acts, actions and projects could be considered as a similar phenomenon in reality, in literature it seems more dispersed but at least not totally opposed.

### **3. Discussion**

#### **3.1 Project Management characteristics influence in the entrepreneurial process**

Since the first theories of entrepreneurship emerged a strong emphasis has been made on the entrepreneur as the acting individual driving and materializing the entrepreneurial act (Schumpeter, 1949). Therefore a great amount of researchers have been trying to explain entrepreneurial efforts and dynamics by focusing mainly on the study of the psychological traits and characteristics from the entrepreneur. This could be possible as some of the first entrepreneurship theories (Knight, 1921; Schumpeter, 1947) were based on economic frameworks driven by individuals with certain characteristics i.e. entrepreneurs, which could be explained by sociology and psychology. However many other researchers have focused on different approaches to explain entrepreneurship based on more variables, causes and relationships.

One of these recent and accepted approaches is to see entrepreneurship as the nexus between entrepreneurial individuals and opportunities, which explains the process of discovery and exploitation of opportunities and the organizing process involved (S. Shane & Venkataraman, 2000; Venkataraman, 1997). Based on this idea Shane proposed a framework of the entrepreneurial process (Shane, 2003; p. 11) involving the identification and exploitation of entrepreneurial opportunities, the decision to exploit them and the resources necessary to exploit and organize them into new combinations. Although the framework depicts the entrepreneurial process as a series of steps including opportunity existence, discovery, decision, strategy, organizing, execution and ultimately performance, more recently Shane (2012) mentions it should not be misinterpreted. He mentions that the entrepreneurial process is not always happening in an organized or strategic way and thus no assumptions should be made regarding the entrepreneurial process being planned, rational, temporarily ordered or strategic. He also mentions that some of the few certainties in entrepreneurship are that interrelated sub-processes as well as individuals form part of the entrepreneurial process.

This gives the opportunity to narrow research on some of these sub-processes and their relations with some characteristics of individuals involved in entrepreneurial process. Considering that no one has yet been able to identify which are the unique assumptions and theories of entrepreneurship (Shane, 2012), then what can stop academics to propose new assumptions even if they are radical to common perceptions. I do not have an answer for this question but I believe that by using different ideas could and would probably yield these unique theories that entrepreneurship research will continue aiming in the coming years. As Shane (2003) mentioned almost a decade ago, the tradition of classical authors in entrepreneurship is to consider an interdisciplinary perspective. As this tradition has not radically changed, I join this trend by integrating project management characteristics into the idea of the entrepreneurial process.

As I exemplified in the literature review in this paper, individual characteristics have been researched extensively in the past to try to explain different effects and outcomes and many believe this stream has been over researched and consequently it has stalled. Critics may appear considering this area of study has been already covered not only by entrepreneurship but also by other fields as strategic management, economics and psychology. Nevertheless I believe contribution on this broad subject can still be done if approached by a different perspective. My intention is not to argue in favour of thinking that individuals should be the only reason to explain entrepreneurship, neither I believe the focus of entrepreneurship studies should be studying only unique characteristics from entrepreneurs. What I do believe is that irrespectively of the perspective that we use to study entrepreneurship researchers cannot neglect that entrepreneurship core lies between individuals and opportunities (S. Shane, 2012; Scott Shane, 2003) and that other disciplines could enrich the knowledge of what we already know.

In other words, I do not want to adopt solely a person-centric approach that relies on referencing to particular types of people. My line of thought uses more the idea that certain characteristics, not attributed by default to an specific type of person but to a field of knowledge, influence the processes and actions of entrepreneurs during some parts of the entrepreneurial process. And what is the logic behind this assumption? As I have mentioned before, entrepreneurial opportunities considered also as projects (Casson & Wadeson, 2007) may derive in entrepreneurial acts, and these acts are individually and socially constructed. In one hand, it is with respect of every actors's view of reality that occurs the social construction of the entrepreneurial act (Lindgren & Packendorff, 2003). In the other hand, social and economic systems influence on dynamics and change in entrepreneurial actions, showing that entrepreneurial behaviour is not only being alert to opportunities but also creating new ones through actions based on subjective interpretations (Sarason, Dean, & Dillard, 2006) obtained from past experience (Dimov, 2010), knowledge and personality.

Based on this reasoning I have noticed that the entrepreneurial projects in entrepreneurship are not always carried out by entrepreneurs but by other roles in society and organizations. So what could this other roles contribute to the understanding, implementation and success of entrepreneurial acts? Are there additional elements that have been considered so far in an entrepreneurship framework? While thinking about this answer, could also trigger the doubt of what could be the effects of adding these other elements. Well probably the simplest answer would be that complexity may increase, but how do we know that the entrepreneurial process is not more complex than simple. To help prove this we can adapt different elements or substitute them in an entrepreneurial process framework to study their relevance. Eventually with time and further research it could be possible to integrate them into the entrepreneurship field or completely discard them. Hence I propose to consider some characteristics from project managers as not being a completely different group of the features found also in

entrepreneurs but rather a group of overlapping features in certain steps of the entrepreneurial process.

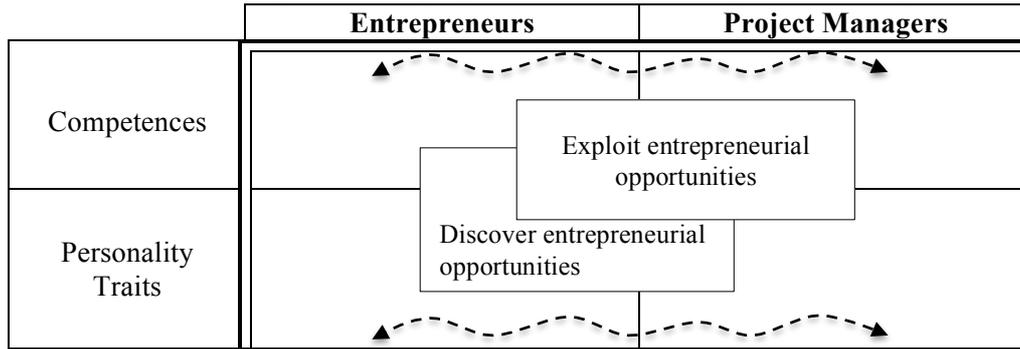


Figure 2. Influential position of individual attributes over exploitation or discovery of opportunities

As we see in Figure 2, although the roles of entrepreneurs and project managers are different in popular perceptions, the reality is that certain features in terms of competences and personality traits show similarity between the actions they perform. For example, let's consider two actions from Shane's entrepreneurial process (2003): discovery and exploitation of entrepreneurial opportunities. If we focus on these two steps, it is probable that the associated outcomes might be influenced by the competences and personality traits of the people involved with these two actions. In which degree or in what direction would be that influence? This is not clear yet as it is depicted in Figure a with a bidirectional dotted line that represents uncertainty about which side could contribute more to the other. What I can do is give a couple of assumptions about the idea of entrepreneurs and project managers being different but complementing each other in Figure 2.

First, both scenarios could be tested either by studying project managers being entrepreneurial inside their organizations or by studying entrepreneurs acting as project managers during some steps of the entrepreneurial process. Second, as some literature argues that entrepreneurial acts could be seen as temporary events with specific but not sequential steps, I believe these influences could be better studied by focusing on the discovery or in the exploitation of entrepreneurial opportunities which are some of the first steps in the development of an entrepreneurial act. Third, more than focusing on the discovery of opportunities I believe that by adding project management into a framework will eventually lead us to pay more attention on the exploitation process.

This differentiation could be helpful to position better either the types of individual characteristics or the types of roles participating with entrepreneurial opportunities. For example researchers as Dimov (2010) centre their studies on the construct of opportunity confidence and its specific relation to feasibility and exploitation of an opportunity by nascent entrepreneurs. Similarly I believe that the opportunity discovery and exploitation capacity have different relationships with the characteristics that the 2 roles depicted in Figure 2 may employ.

- a) The discovery process is skewed towards the entrepreneur side because I assume that project managers in organizations are appointed most of the time with an already 'chosen project'. This project has specific goals and scope and thus the influence of individual attributes would not be so strong on the discovery process of opportunities. Based on this idea, it would be more important for entrepreneurs than to project managers to have the right mix of characteristics in order to discover an opportunity. Although I do not claim that the discovery process could be more influenced by personality traits in comparison to competences in any of

both types of individuals, the social construction affected by every actor view of reality may indicate that individual personality drive this subjective interpretations.

- b) On the contrary, the exploitation process is skewed towards the project manager side because of their trained potential to implement and exploit projects. Thus we could assume that project managers are qualified individuals and probably ‘experts’ on implementing projects. Consequently it could be assumed that they could also be good at exploiting other types of opportunities, including entrepreneurial acts and projects. Therefore as project manager use more objective practices and approaches to exploit projects, then it could be assumed that competences may have a more direct effect rather than personality traits.

Just to avoid misinterpretations, I am not saying that one role is better than the other in some stages of the entrepreneurial process or that it poses stronger individual characteristics. What I tried to propose is that some individual characteristics like competences and personality traits could be more visible, simple and prolific to study if considered in a specific process in one of the two sides of the box. Last but not least, the characteristics or factors that explain one part of the entrepreneurial process do not have to explain other parts, same as with entrepreneurship models (Shane, 2003), meaning that competences or personality traits, that may influence the exploitation of entrepreneurial opportunities, may not have the same effect to explain the discovery of these opportunities.

### **3.2 The conceptual model and its propositions**

The challenge after proposing the past assumptions about entrepreneurs and project managers’ characteristics is to adapt them within the entrepreneurial process with a logical sense that could be empirically researched. As I just stated, the notion of overlapping characteristics could be studied under either of the two scenarios, project management or entrepreneurship. However I chose an entrepreneurship perspective, as it is broader and it is considered to be more flexible and less restrictive. Consequently this would allow me two things, first to consider some entrepreneurs as project managers but also some project managers as entrepreneurial individuals. And second, based on the project-based perspective of entrepreneurship, opportunities could be seen as entrepreneurial acts or projects and conversely.

In addition if we consider a framework where the entrepreneurial process does not always require some form of creative destruction type of innovation and ultimately creating a new venture, opens the possibility to study other types of entrepreneurial acts. These acts could be very diverse and should not be limited, or as Shane (2012, p. 213) mentions “*If researchers limit the discussion of entrepreneurship just to firm formation, then researchers would be limiting the field to study only one type of entrepreneurial effect for an activity that can also take place in other types of ways*”. Besides by considering that entrepreneurial acts are similar to projects i.e. unique, complex undertakings subjects to limitations in terms of resources, time and quality (Packendorff, 1995) we justify the inclusion of some project management characteristics into an adapted entrepreneurial process model.

Based on different ideas but related concepts like the nature of entrepreneurial opportunity and its outcomes (McMullen, Plummer, & Acs, 2007), the importance and distinction of the discovery and exploitation of an opportunity (S. Shane & Venkataraman, 2000; Scott Shane, 2003) and the relationships between human capital, opportunity exploitation and entrepreneurial results (Dimov, 2010) the framework in Figure 3 was created. In this model some elements have been emphasized more extensively than others during this paper, however my first attempt is not to examine in a detailed way all the parts of the ‘entrepreneurial ship’, but to propose a model where relationships can

exist between project management features and other elements in the entrepreneurial process. Let's review some of the more general relations, however a subset of relationships could always be added.

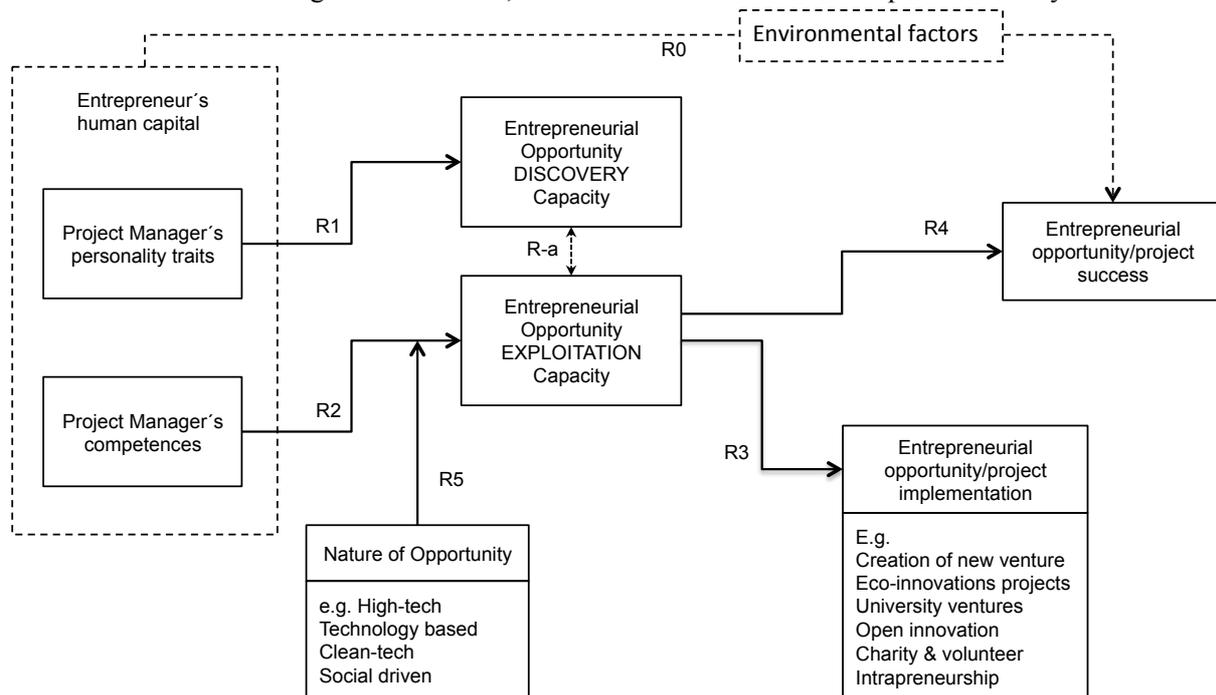


Figure 3. A project-based model of the entrepreneurial process anchored on project manager's features.

At the right side of the model entrepreneurs are the main actors driving and attempting entrepreneurial acts. I do not intend to portray the word entrepreneur as a single lonely man creating a new firm but as an actor that has the possibility to be represented by a mix of heterogeneous individuals or teams. The entrepreneur's characteristics and resources are part of the 'arsenal' that he needs to undertake an entrepreneurial act. This arsenal entrenched in his human capital is one of the main non-physical resources that will support the process associated to this act. I depict 'RO' as a dotted and blurred relationship of environmental factors as mediators between entrepreneur's human capital influence over entrepreneurial success not because I believe it is not important neither that past researched has not contributed to this argument. I do it to acknowledge that human capital together with other factors like industry, environment, social capital, financial status amongst many other could contribute in very different degrees to entrepreneurial success but I consider it the preposition 0 because although we recognize this relationship exist, due to the quantity of exogenous variables affecting the outcome, research efforts should be in other parts of the entrepreneurial process:

*Proposition 0: Entrepreneur's human capital has influence on entrepreneurial success but other variables as environment, social capital, government, and type of industry amongst others could have the same degree of influence.*

Based on the idea to add project management elements into the entrepreneurial process, I depict project managers personality traits 'R1' and project managers competences 'R2' as having an effect on the opportunity discovery capacity of the individual and on the exploitation capacity respectively. As most studies related with individual characteristics in most fields consider either competences or personality traits separately, I follow this trend in order not to mix the individual characteristics effects and their different relations. I admit a clear distinction between both groups of characteristics could be complicated but I also believe it is necessary in order to enrich the studies of individual characteristics in the entrepreneurship field. In addition as I have noticed while reviewing the literature on individual

characteristics, the methods and strategies to collect data will be influenced and differentiated by focusing on any of the two groups, thus the need for a distinct proposition.

With this logic under consideration even if there is not a straightforward and obvious relation 'R1' between the project manager's personality traits that an entrepreneur may exhibit and its capacity to discover entrepreneurial opportunities a proposition could be suggested. This could be based on the idea that as personality traits are related to habitual patterns of behaviours, thoughts, emotions and attitudes inherent to a person nature, these are open to influence by subjective interpretations the alertness to opportunities (Sarason et al., 2006) and other entrepreneurial behaviours.

***Proposition 1: There is a positive relationship between certain project manager's personality traits and the capacity of an entrepreneur to discover entrepreneurial opportunities.***

This capacity to discover entrepreneurial opportunities could not directly influenced the capacity to exploit the same opportunity therefore the relationship 'r-a' which can be exhibited by an entrepreneur in a parallel way is represented by a dotted bidirectional line. For the sake of the model argument I avoid a restriction of sequential characteristics and capacities and instead I focus on both individual capacities as parallel. Therefore to exploit opportunities an entrepreneur examines strategies and tools, and is involved in resource acquisition i.e. gather resources and recombine them into a new form (Scott Shane, 2003). As mentioned before I believe project management practices could contribute in great extent in this exploitation activities and process more than in the discovery process. This is the reason that relationships between entrepreneur's human capital and the opportunity exploitation capacity might be highly influenced by project manager's competences. I can afford to make this assumption as Shane (2012) mentions that correct entrepreneurship process might be not something easily deducible thus same features of individuals and opportunities may or may not influence the discovery of opportunity, the decision to exploit it and finally the performance of the opportunity.

***Proposition 2: There is a positive relationship between certain project manager's competences and the capacity of an entrepreneur to exploit entrepreneurial opportunities.***

The next usual step in an entrepreneurial process would lead to the relationship 'R3' between the opportunity exploitation capacity and its effect on deciding to pursue or complete entrepreneurial acts. This means that after having the capacity to discover an opportunity and then having the capacity to exploit it, the entrepreneur actually will need to pursue it and will look to implement it. Based on the project-based views of entrepreneurship, the implementation not only refers to opportunities but to projects and entrepreneurial acts in general. These could be exemplified by the creation of new ventures but could also be materialized in the form of other entrepreneurial acts like project-based acts, eco-innovations projects within companies, intrapreneurship, open innovation projects amongst others. So either if the entrepreneurial projects could range from different actions, purposes and scopes the exploitation capacity continues to be a determinant of the opportunity or project completion.

***Propositions 3: The exploitation capacity of an entrepreneur mediates the relationship between certain project manager's competences and the achievement of entrepreneurial acts and projects.***

It should be noted that the model clearly differentiates between the process of deciding to exploit an opportunity to later execute and achieve an entrepreneurial opportunity or project 'R3' and the process of actually being successful on doing it correctly 'R4'. This could be better explained by Shane (2003, p. 224) who mentions "the attributes that increase the probability of opportunity exploitation do not necessarily increase the probability of success". This supports the idea that some of the relationships in our model may have more weight than others in empirical settings and thus it is necessary to

explore their effects and correlations. For example what if an entrepreneur possesses good project management competences as planning, organizing and risk management which in turn drive her to pursue, exploit and achieve an entrepreneurial opportunity. But later she fails to maintain and operationalize the opportunity into results because the same risk management competences do not allow her to make risky decisions to succeed from an entrepreneurial viewpoint. Consequently a proposition that makes the distinction between implementation and success could be beneficial.

***Proposition 4: The exploitation capacity of an entrepreneur mediates the relationship between certain project manager's competences and the success of entrepreneurial acts and projects.***

Finally I believe the nature of an opportunity has a moderator effect 'R5' between project managers' competences and the opportunity exploitation capacity of an entrepreneur. This under the logic that depending on the type of opportunity and how the entrepreneur considers it would influence in some degree which features he will need to exploit properly the opportunity. These relations should exist as Shane (2003) mentions that entrepreneurship requires a decision by a person to act upon an opportunity that is idiosyncratic to an individual, thus opportunities are exploited only when a human being decides to act. This creates variations between persons in their willingness and ability to act that consequently affects the entrepreneurial process. Sarason et al. (2006) also mentions that as each entrepreneur's unique view causes him to see an opportunity idiosyncratically allowing entrepreneurial ventures to be the outcome of entrepreneurs' actions, his interpretations of opportunity do not make opportunities a singular phenomenon.

Moreover, opportunities vary on several dimensions that influence the expected value and its characteristics influencing the motivation to people to exploit them (Shane & Venkataraman, 2000). Based on the ideas and perceptions of the entrepreneur regarding the nature of the opportunity (McMullen et al., 2007) an entrepreneur can choose the specific project management competences he could use to support his opportunity exploitation. Thus the variations of ability to act in an entrepreneurial process could be explained by finding which characteristics are really relevant for an entrepreneur by using the nature of opportunity as a moderator of the exploitation ability.

***Proposition 5: The nature of the opportunity moderates the relationship between certain project manager's competences and the entrepreneur's capacity to exploit entrepreneurial opportunities.***

Additionally, considering that project managers could be involved in a wide variety of projects, triggers the idea that the nature of the opportunity or the type of project may impact the kind of project manager's competences that are needed, thus a universalistic approach to manage entrepreneurial opportunities or projects might not seem appropriate. This is sustained by previous studies showing that different types of projects should be managed in different types of ways (Dvir, Sadeh, & Malach-Pines, 2006) and probably also by different types of people. This would imply that if the idea of exploiting certain types of projects is being considered in the entrepreneurial process then the idea of using certain project manager's characteristics to do so could be also possible.

#### **4. Conclusion**

The purpose of this paper was to propose a project-based entrepreneurship model that can be used to research project management features in the entrepreneurial process. The perspective I used to justify my ideas and assumptions about project management characteristics related to the entrepreneurial process is based on recent project-based views of entrepreneurship. Although I agree with the

assumptions that these views have considered so far, I believe I could contribute to them in a different way considering that entrepreneurial opportunities, acts and processes are influenced by individual characteristics. Therefore I proposed a conceptual model that includes project manager's competences and personality traits as influencing in great extent the entrepreneurial process. I depicted these relationships by using moderators and mediators constructs as well as emphasizing the links with the opportunity exploitation process and with the discovery one. Another contribution of this paper is a group of 5 propositions based on the conceptual model, which I believe could be researched empirically. In general this paper contributes to the idea of project-based entrepreneurship not by aiming to confront both disciplines but to make clearer that they complement each other.

I am aware that maybe a project management approach is not consistent with popular perceptions of entrepreneurs or with the common view of the entrepreneurial process; however this is not probe or justification to refute the proposed framework in this paper. Some researchers have argued that common views are not sufficient to reject suggested definitions and views in entrepreneurship (S. Shane & Venkataraman, 2000). And even after several years of intensive research in entrepreneurship this idea persists. As Shane mentions (2012; p. 13): "...consistency with popular perceptions should not be the basis on which a field of scholarly inquiry is defined. Economists do not limit their field to what readers of the Wall Street Journal call economics, nor do psychologists define psychology by what the average person thinks the concept means." Therefore I expect some critics will arise from the idea of adapting project management knowledge, practices and characteristics into the study of the entrepreneurial process. However I am eager to see if by proposing a conceptual model different to common and classical perceptions of entrepreneurship (and hopefully also proving it empirically) I may attract the attention and gain the acceptance of my ideas by other academics, and of course also by entrepreneurs.

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