

## 11<sup>ème</sup> congrès de l'Académie de l'Entrepreneuriat et de l'Innovation

### Rethinking the opportunity/necessity dichotomy with a risk management-based approach

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#### Summary

Following Global Entrepreneurship Monitor (GEM), it became common to separate entrepreneurs by opportunity (those who create a company to exploit a perceived business opportunity) and entrepreneurs of necessity (those who are urged to start their own business in the absence of other career options). But a growing literature shows that the dichotomy opportunity / necessity is a misleading way of categorizing the groups of entrepreneurs and need to be refined. Using empirical data, we define different profiles of necessity and opportunity entrepreneurs. Moreover, we show that their capacities to perceive and manage risks can vary a lot according to these profiles and identify some opportunities to adapt support during the gestation process.

**Keywords:** necessity entrepreneurship, opportunity entrepreneurship, risk management, micro-insurance, entrepreneurial support, typology

#### Introduction

In response to the successive economic crises, the public authorities strongly monitor and promote entrepreneurship as a way of socio-economic integration, indeed necessity entrepreneurship. But starting a business exposes them to a wide range of risks (Bayart and Saleilles, 2017). Simply encouraging more people to start a venture would be a bad public policy (Shane 2009). It is particularly important to offer dedicated support to these entrepreneurs, who have specific needs (Dupont et al., 2016), so that their adventure could have a positive societal and personal impact. However, the design of such mechanisms requires returning to the dichotomy opportunity / necessity.

According to Global Entrepreneurship Monitor (GEM, Reynolds et al., 2001), it became common to separate entrepreneurs by opportunity (those who create a company to exploit a perceived business opportunity) and entrepreneurs of necessity (those who are urged to start their own business in the absence of other career options). But a growing literature shows that this dichotomy is a misleading way of categorizing the groups of entrepreneurs (Williams and Williams, 2009, Williams and Williams, 2014). Main critics concern the criteria used to distinguish opportunity / necessity entrepreneurship. The motivations to start-up are difficult to capture (Dawson and Henley, 2012), may change in time and are often composite. Indeed, it seems necessary to consider that the categories of “entrepreneur by necessity” and “entrepreneur by opportunity” are far from being homogeneous (Tessier, 2018) and that it exists different profiles of necessity-opportunity entrepreneurs (Giacomin and al., 2016).

Start-up created by necessity entrepreneurs are poorly structured, fragile and remain exposed to the slightest uncertainty (Fayolle and Nakara, 2012) and remain vulnerable (Bayart and Saleilles, 2018). The literature suggests that the ability to manage risks is less obvious to necessity entrepreneurs. In comparison with opportunity entrepreneurs, the latter are founded to be more risk averse (Block et al., 2015), to have a lower or depreciated (during interruptions associated with unemployment spells) human capital (Battista et al., 2014) and to be less proactive in the gestation process (Giacomin et al., 2011, 2016). Finally, the entrepreneurial motivations seem to affect the comportment in term of risk-management. That’s why we propose to refine the necessity-opportunity typology with a risk-management based approach. Proactivity of the entrepreneur in term of risk-mitigation strategy help to reduce the probability of failure of his/her company (Shepherd et al., 2000). Nevertheless, starting a business exposes entrepreneurs to a wide range of risks, which can affect the entrepreneur or his/her company, and be diverse (personal, financial, business, hazard, etc.). Moreover, the comportment of the entrepreneur in term of risk-management depends also not only on entrepreneur’s risk attitude but also on his/her risk perception.

Based on these elements, the objective of our research is to determine whether different profiles of necessity-opportunity entrepreneurs exist (1). Then, we argue that the motivations to start-up could significantly influence the risk-mitigation strategies adoption by entrepreneurs (2). Finally, we show that the impact of entrepreneurial motivations on risk-mitigation strategies implementation could be due to differences in terms of perception of criticality of personal and enterprise risks. To our knowledge, no empirical studies have been conducted on this issue.

This paper is structured as follow. It starts with a literature review, which discusses the dichotomy opportunity / necessity and shows the interest to refine it with a perspective in term of risk-mitigation strategies (section 1). Then, we introduce the quantitative methodology and presents main results (section 2). Finally, we propose a necessity/opportunity entrepreneur’s typology based on their ability to manage their risks (section 3). The paper concludes with some recommendations to improve entrepreneurial support and address some suggestions for future research (section 4).

## 1. Theoretical background / Literature review

### 1.1.The dichotomy opportunity / necessity: a typology to refine

Since the emergence of the Global Entrepreneurship Monitor (Reynolds et al., 2001) and in reference to the well-established theory of push and pull motivations (Shapero,1975), it has become commonplace to represent entrepreneurship dichotomously, as either opportunity (i.e. individuals who are pulled into entrepreneurship as they seek to exploit a perceived opportunity) or necessity (i.e. individuals who are pushed into entrepreneurship because all other options are absent or unsatisfactory) driven (table 1).

**Table 1: Key differences between necessity and opportunity entrepreneurs (Giacomin et al., 2011, Bastista et al., 2014; Giacomin et al., 2016, Teissier 2018)**

<i>Type of entrepreneur</i>	<i>Necessity</i>	<i>Opportunity</i>
Motivations	Push, extrinsic, constrained	Pull, intrinsic, voluntary
Business areas	Farming, retail trade	Automotive, BtoB services, technology
Characteristics	Lower financial, human and social capital	Better prepared to start a business
Behaviour	Little involved, lack of preparation, response to entrepreneur’s need	Active in the creation company’s process, more complex tasks, response to market’s need
Results	More failures and me-too business	More innovative and cost efficient business
Support	Psychological to develop entrepreneurial motivation	Economical to develop entrepreneurial skills

Lower or depreciated (during interruptions associated with unemployment spells) human capital seems to be an important weakness of necessity entrepreneurs (Battista et al., 2014). Creating with the main objective of entering the job market, necessity entrepreneurs does not necessarily have entrepreneurial skills, nor the resources, in the broad sense (financing, experience, professional network, family support, etc.) to succeed (Blackburn and Ram, 2006). They can often feel socially isolated, manage poorly their network, under-utilize it and do not have an efficient financial network (Sarason et al, 2006). If public policies encourage many job seekers to start their own businesses, the sustainability of their activities is much more complicated (Caliendo and Kritikos, 2010). Necessity entrepreneurs would be less motivated by entrepreneurship and less involved in the creation process. In this context, conventional support seems inadequate (Dupont et al., 2016). It is necessary not only to motivate necessity entrepreneurs to develop their activity, but also to restore their confidence through psychological assistance and strongly personalized support. Unfortunately, support practitioners (often trained in management) do not always have the skills required to deal with the social and personal distress of necessity entrepreneurs and only propose technical support (accounting, legal, etc.).

Although the necessity/opportunity dichotomy is now widely accepted by researchers, practitioners and policy makers, a growing literature shows that it is a misleading way of categorising types of entrepreneurship. Three main critics are developed in the literature (Teissier, 2018). First, the methodology used to identify necessity entrepreneurs is harshly criticized (Dawson and Henley, 2012). Are notably discussed the reliability of self-declaration, the possibility of misinterpretation or the risk of social desirability bias. Individuals can feel reluctant to admit they create out of necessity, as this is a rather downgrading term (Bergmann and Sternberg, 2007). In the Global Entrepreneurship Monitor, the distinction between opportunity and necessity Entrepreneurship is just measured by a very small number of questions. Moreover, in lots of studies, the nature of motivation is in fact identified by a proxy, like the situation on the job market of the entrepreneur. Second, key motivations change over time. They may evolve from necessity to opportunity during the venture development process, especially if the business is successful (Williams and Williams, 2014). Third, entrepreneurs are frequently driven by both necessity as well as opportunity factors (Williams and Williams, 2009): 10 to 15% of entrepreneurs express a mix of push and pull motivations (Stephan and al., 2015). Recently, new typologies propose to refine the necessity/opportunity dichotomy, which appears too simplistic and does not correspond to the reality (Kirkwood and Campbell-Hunt, 2007). They consider necessity or opportunity entrepreneurship as not homogeneous categories.

Tessier-Dargent and Fayolle (2016) propose a typology of necessity entrepreneurs based on a broad literature review, considering that necessity entrepreneurship depends less on the motivations of individuals, which are multiple and progressive, than on situations and context that compel the entrepreneur to create. Their work calls for further reflection to better understand how the environment, life circumstances and entrepreneurial context affect the processes of entrepreneurship by necessity.

Thanks to a cluster analysis of the entrepreneurial motivations (12 indicators, see table 4) of 538 entrepreneurs, Giacomini and al. (2011, 2016) identify five subgroups of necessity-opportunity entrepreneurs: mainly necessity entrepreneurs, strictly necessity entrepreneurs, mainly opportunity entrepreneurs, strictly opportunity entrepreneurs and entrepreneurs who are motivated by a Mix of Necessity-Opportunity motivations.

**Table 2 - the five subgroups of necessity-opportunity entrepreneurs (Giacomini et al. (2011, 2016)**

	<b>Motivations</b>	<b>SN</b>	<b>MN</b>	<b>SMON</b>	<b>MO</b>	<b>SO</b>
Desire for independence	being autonomous; having no boss anymore; creating one's own job	+		+	+	+
Market opportunity	developing new manufacturing processes ; developing new products		-	-	-	+
Profit search	increasing one's income; earning big money	-	+		+	-
Search for social recognition	obtaining prestige; being socially recognized	+	+	+	+	
Unemployment	get out unemployment		+	-		
Family influence	perpetuating the family tradition; meeting family expectations	+		-		

*SN: Stricly Necessity – SO: Stricly Opportunity – MO: Mainly Opportunity – MN: Mainly Necessity – SMON: Stricly Mix Opportunity-Necessity*

Their work show that there are differences in terms of gestation process between these kinds of entrepreneurs. The opportunity groups (strictly and mainly) are more proactive during the gestation process than necessity groups (strictly and mainly). Notably, opportunity groups are more inclined to do a market study and a business plan than the other groups. Giacomini and al. (2011, 2016) explains this by the need to compensate opportunity costs, which are higher for opportunity entrepreneurs. If differences between strictly and mainly necessity entrepreneurs (about private support and market study use) are clear, differences between mainly and strictly opportunity entrepreneurs remain low and focused on activities about market comprehension (market studies and strategic development). Unlike strictly opportunity entrepreneurs, mainly opportunity entrepreneurs are not motivated by the market opportunities. Because of that, mainly opportunity entrepreneurs could have a poorer understanding of market environment and could be more proactive in terms of market study. Giacomini and al. (2011, 2016) work calls for further reflection to refine the opportunity-necessity typology to better capture the complexity of entrepreneurial motivations and their impact on the entrepreneurial process.

We propose to complete their work in a double direction. First, by focusing on the distinction between opportunity groups, as the heterogeneity of opportunity entrepreneurs is less discussed in the literature than the heterogeneity of necessity entrepreneurs (Fayolle and Teissier-Dargent, 2018). Moreover, Giacomini et al. (2011, 2016) results remain sparse about differences between opportunity groups. Secondly, by investigating the impact of entrepreneur's motivation to start-up on the adoption of risk-mitigation strategies.

## **1.2. The risk-mitigation strategies of entrepreneurs: distinguishing personal and enterprise risks**

Entrepreneurship implies at the same time two diverse risk-management strategies. First, it implies an exposure at risks on a market characterized by the uncertainty (McKelvie et al., 2011). Indeed, the first risk is "to miss the boat" (Dickson and Giglierano, 1986) or personal risk. But entrepreneurship also implies the capacity to develop various strategies to reduce these risks and ensure the sustainability of the enterprise on the market (Shepherd and al., 2000). Indeed the second risk is "to sink the boat" (Dickson and Giglierano, 1986) or enterprise risks. We then present the diverse risk-mitigation strategies discussed in the literature for each risks.

### **1.2.1. Personal risk-mitigation strategies**

Risk associated to the entrepreneur is generally seen in its positive dimension, or to use the terms of Dickson and Giglierano (1986) as the risk "to miss the boat ". The objective is to take risks to set up the company on an uncertain market (McKelvie et al., 2011). Fayolle et al. (2008) identify three diverse personal risks:

- financial risks : starting a new business can have financial consequences for the entrepreneur
- risks linked to the professional/personal life: starting a new business can have consequences for professional life, self-confidence or personal life
- social risks: starting a new business requires not only financial capital and personal commitment, but also an important support of family members and close relatives. Conversely, it can have consequences for these two social groups.

From this perspective, a negative perception of consequences (financial lost, negative impact for professional/personal life, negative impact for family and close relatives) of personal risk decreases the probability to create a company. On the contrary, a positive perception of

consequences (financial gain, positive impact for professional/personal life, positive impact for family and close relatives) of personal risks increases the probability to create a company (Fayolle et al., 2008).

This perspective is close to the notion of opportunity cost proposed by Block and Wagner (2006). When an individual has the intention to create an entrepreneurial activity, he/she considers the opportunity costs associated with this decision. In other words, an individual will decide to create an entrepreneurial activity if the activity has a higher expected return than the opportunity costs to create the business. Past literature stress that necessity and opportunity entrepreneurs differ in terms of opportunity costs, which are higher for opportunity entrepreneurs, because necessity entrepreneurs do not have other alternatives (Block and Wagner, 2006). Giacomini et al. (2011, 2016) show that the difference in terms of opportunity costs between the two kinds of entrepreneurs influence not only their probability to start-up but also their respective gestation process. Indeed, opportunity entrepreneurs are more proactive in the gestation phase than necessity entrepreneurs in order to increase their probability of success and, thereby, to reduce their opportunity costs linked to entrepreneurial intention.

In the same vein, Raffie and Feng (2014) propose to risk preferences and risk perception may influence how (the entrepreneurial entry process), rather than if (the entrepreneurial entry choice) an individual decides to start a new business. By reducing what is put “at risk,” starting a business via hybrid entrepreneurship - the process of starting a business while retaining a daily job in an existing organization (Raffie and Feng, 2014) – is less risky than doing so full time. Notably, hybrid entrepreneurship allows individuals to reduce financial risk by receiving wage from paid employment, when starting a new venture (Folta et al., 2010). Raffie and Feng, (2014) show also that hybrid entrepreneurship improve the survival rate, because of the learning effect that takes place during hybrid entrepreneurship. Finally, the cognitive approach suggests assessing risk through its mental representation by the entrepreneur. This one depends not only on entrepreneur’s risk attitude but also on his/her risk perception (Fayolle et al., 2008). Based on these researches, we propose the following assumptions:

H1: Mainly Opportunity Entrepreneurs, because they are motivated by the search for social recognition, perceive lower personal risks than Strictly Opportunity Entrepreneurs

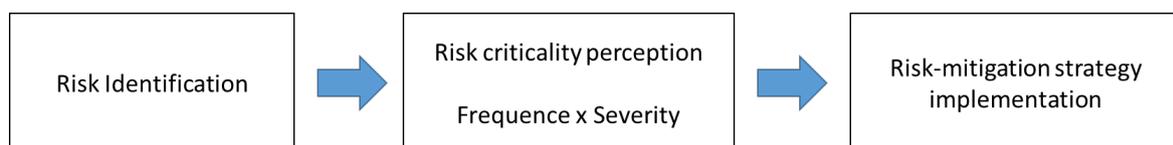
H2: Strictly Opportunity Entrepreneurs are more likely to engage in hybrid entrepreneurship, to reduce personal risks, that they perceived more than Mainly Opportunity Entrepreneurs.

### 1.2.2. Enterprise risk-mitigation strategies

Risk can generally be defined as the potential that a certain action will lead to an undesirable effect, which may affect the achievement of the objectives of a company. In the start-up process, Wu and Knott (2006) differentiate risks inherent in the market (external) from risks related to the entrepreneur's abilities (internal). Not sinking the boat consist in reducing the risks associated to the entrepreneurial project (business, management, technology...) to strongly establish the company on the market. Any start-up company is faced with the “liability of newness” (Stinchcombe, 1965). That means entrepreneurs have to deal with fragile conditions in the setting up period. In this context, the risk of failure depends on two things. Firstly, the degree of newness in three dimensions: market, production technology and management. Secondly, the combination of these dimensions (Shepherd et al., 2000). Learning and quest for information during the creating process would gradually lead to the mitigation of this risk, as the entrepreneur becomes less new and ignorant of each of these dimensions. Beyond this evolutionary vision, the entrepreneur can implement proactive strategies in order to mitigate risks and reduce the probability of failure of his/her company (Shepherd et al., 2000).

The risk-management literature describe a process, which includes three different stages (Hollman and Mohammad-Zadeh,1984): (1) identifying possible sources of loss and thus risks, (2) estimating the potential frequencies and impacts of risks on business development and (3) the implementation of risk management strategy. If we adapt this approach to the entrepreneurial project context, we can suppose than entrepreneurs implement a proactive risk mitigation strategy if they identify a risk and perceive it as critical. Two factors determine the entrepreneur’s perception of the criticality of a risk: the perception of a frequent potential dangerous situation for the company and the impact on the company if this situation occurs.

**Figure 1 - Risk management process**



In this perspective, risk mitigations strategy calls for anticipation, in order to detect possible risks, prevention, to make them less common, and protection, to reduce the severity of damages.

Several tools and methods are available to implement risk-mitigation strategy in an enterprise, as for example insurance, weather derivate, selection of suppliers, overcapacity in production, emergency plan, networking/cooperative relations, asset securizations... (Falkner and Hielb, 2015). Companies can manage risk with the help of “external” sources (networking) and “internal” strategies (Kim and Vonortas, 2014). Networking is a frequently used risk-mitigation strategy in SMEs, mostly to face technology, financial and market risks (Kim and Vonortas, 2014). Networking helps to negate perceived risks and to elicit experienced advices and/or information, useful to entrepreneurs who have to take some decisions in a risky situation (Gilmore et al., 2004).

Based on these researches, we propose the following assumptions:

H3: Strictly Opportunity Entrepreneurs, because they are motivated by a market opportunity, perceive lower market risks than Mainly Opportunity Entrepreneurs

H4: Mainly Opportunity Entrepreneurs are more likely to adopt market risk-mitigation strategies in order to reduce market risks, that they perceived more than Strictly Opportunity Entrepreneurs

Table 2 presents the key hypotheses of our model. Focusing on the two opportunity groups identified by Giacomini et al, 2011, 2016), we argue that MO are more likely to implement market risks-motivation strategies when SO are more likely to implement personal risks-motivation strategies.

**Table 1 - Hypotheses of the research**

	Mainly Opportunity Entrepreneur	Strictly Opportunity Entrepreneur
<b>Motivations (Giacomini et al., 2011, 2016)</b>		
Desire for independence	+	+
Market opportunity	-	+
Profit search	+	-
Search for social recognition	+	
Unemployment		
Family influence		
<b>Personal risks criticism (H1)</b>	<b>Low</b>	<b>High</b>
<b>Personal risks-mitigation strategies (H2)</b>	<b>No</b>	<b>Yes</b>
<b>Market risks criticism (H3)</b>	<b>High</b>	<b>Low</b>
<b>Market risks-mitigation strategies (H4)</b>	<b>Yes</b>	<b>No</b>

## **2. Method / Research design and data source**

Our analysis is based on a web survey of entrepreneurs conducted in 2018. We first present the methodology, then describe the constructs, before giving results concerning respondents' profile.

### **2.1.Exploratory quantitative survey**

Respondents were recruited not only from entrepreneurial support networks in Lyon area but also from several social networks. Contacted by email, recent entrepreneurs (who started a business for less than 5 years) were invited to complete the survey by following a link to the online questionnaire. During the survey period, 105 completed questionnaires were received, but two of them were discarded due to partial non-responses. The aim of the survey was to understand the entrepreneurs' motivations, risk attitudes, perception and mitigation strategies. The questionnaire first gave the main objective of the research and is then divided into five parts. It started with questions about the company and entrepreneurial capacities, including motivations to create, before focusing on risk perception. We asked entrepreneurs how they perceive the probability of occurrence of several events as well as their expected impact on firm's survival. Questions about risk management strategies then allowed identifying attitudes and actions implemented. The survey ended with questions about the respondent profile.

### **2.2.Variables of the web quantitative survey**

#### **2.2.1. Entrepreneurial motivation**

To distinguish entrepreneurs according to their necessity / opportunity motivation, we asked them to indicate their agreement with different items on a five-point Likert scale ranging from one ("completely disagree") to five ("completely agree"). We used the same indicators as Giacomini and al. (2011, 2016) and the classification they propose to qualify necessity and opportunity-based entrepreneurship (table 3). We verify the internal validity of this classification of necessity-opportunity pull indicators by using the Cronbach alpha. We obtained respectively a coefficient of 0.71 and 0,69 for the necessity and opportunity classification.

**Table 4: Classification of underlying indicators of necessity-opportunity entrepreneurship (Giacomin et al., 2011, 2016)**

Necessity motivations	Opportunity motivations
Escaping unemployment	Earning big money
Obtaining prestige	Increasing income
Being socially recognized	Being autonomous
Meeting family expectations	Creating one's own job
Perpetuating the family tradition	Having no boss anymore
	Developing new products/services
	Developing new manufacturing processes

We also measured the persistence of the entrepreneurial career with the item “In the future, I shall prefer find a paid employment”.

### 2.2.2. Risk attitude

The risk attitude with regard to start-up is measured as Block et al. (2015). The participants were asked to indicate their willingness to take risks in the context of their start-up on a seven-point Likert scale ranging from one (“complete will- willingness”) to seven (“complete unwillingness”). This risk measure has been validated in previous published researches (Dohmen et al., 2010).

### 2.2.3. Risks criticality perception

We evaluated the perception of risk criticality, defined above as the product of strong frequency and strong severity of an unexpected event. According to Rauch et al. (2009), the concept is measured by two questions: “The likelihood that your company will be impacted by the following events is ...” (frequency) and “the likelihood that your company will be impacted by the following events if they occur is ...” (severity). Each question combines three items relative to personal events (health and affective problems), six items relative to business events (treasury issue, product's failure...) and three items linked to hazard events (stolen goods, wrongdoing...). For each item, respondents were asked to position themselves on a five points Likert scale (1= completely disagree, 5= completely agree).

### 2.2.4. Risks mitigation strategies

Four types of risk reduction strategies were then measured.

The first concern a personal risk-mitigation strategy, the hybrid entrepreneurship (Raffie et Feng, 2014). Through a dummy variable, we isolated entrepreneurs who declare keeping a paid-activity in parallel of their new business. Even more, we identify those who receive unemployment benefits at early-stages of company formation.

The second concern enterprise risks-mitigation strategies, indeed actions entrepreneurs may implement in the context of their start-up (signing of associates' pact, diversification of clients and suppliers, market research, financial monitoring...). For each of them, three modalities were available: yes (coded 2), no (coded 0) and possible in the future (coded 1). Before running analyses, we group modalities in two types of enterprise risks-mitigation strategies: financial risks-mitigation strategies and market risks-mitigation strategies.

The third strategy is the subscription of insurance contracts. Six insurance products were proposed: health mutual, professional providence, ten-year warranty, car insurance, professional civil liability and professional multirisk insurance. In our analysis, we distinguish only two types of risk insurance: personal risk insurances (health mutual, professional providence) and enterprise risk insurances.

The last risk-mitigation strategy measured is networking, by the question "What are your main sources of advice when you have to make a major decision concerning your company?" Several possible answers were proposed. Before running analyses, we group modalities in three macro variables, as recommended by Watson (2007): formal advisors (lawyer, support agencies and consultancy firms), day to day advisors (accountant, banker, family and close relatives) and value advisors (clients, suppliers, employees). As seeking advice is one of the major purposes of networking (Hoang and Antoncic, 2003), and particularly in risk-mitigation strategies (Gilmore et al., 2004), we think it is an appropriate measure.

### **2.3.Descriptive statistics**

The mean and median age of the respondents is 42 years, and 25% of the entrepreneurs are 34,5 years old or less. 62% are males and only 38% females. Around three quarters are in couple. Most of respondents have a high level of education, as 89% have validated a university degree. Concerning the entrepreneurial experience, 45% have invested 5000 euros or less (vs. 23% who have invested more than 25000 euros) in their business and 60% don't work with a corporate network. Approximately one in two respondents have an entrepreneur among their close relatives (parent = 19% and other family member = 30%). One quarter could be defined as "serial entrepreneurs", because they have created another company yet, but 22,5% have neither experience in entrepreneurship, nor in management. Before creating their company, only 54%

had a professional activity and 37% have kept a paid activity in parallel of their business launch. Lastly, more than three quarters of surveyed entrepreneurs perceive revenue from their start-up. But only 36% declare that the perceived amounts met their expectations. Descriptive statistics of the sample are available in Appendix 1.

### **3. Results / Findings**

In this section, we first analyse the risk detectability ability of entrepreneurs, before computing a clustering analysis based on motivation to start-up.

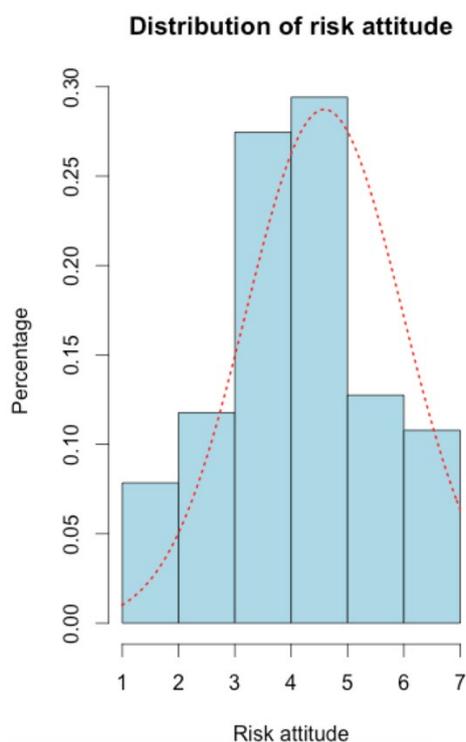
#### **3.1.Risk management abilities**

We first analyses our results about risk attitude, risk criticality perception and risk-mitigation strategies.

##### **3.1.1. Risk attitude**

Literature highlights internal and external characteristics, which play an important role in the entrepreneurs' risks attitude. As risk attitude is highly contextual (Ray, 1994), respondents were asked to indicate their willingness to take risks in the context of their start-up. With a mean of 4,59 (standard deviation=1,38) and a median equal to 5, around the middle value of the scale, we can be confident in the scale used to measure risk attitude. The kurtosis, which reflects extreme values dispersion relative to the standard normal distribution, has a very low value (-0,403). The skewness, which assesses the lack of symmetric distribution is slightly negative (-0,104) (left skewed). So, risk attitude with regard to start-up can be considered as quite normally distributed (Figure 2).

**Figure 2: Histogram of risk attitude with regard to start-up**



We estimate ordered logistic regression for the dependent variable risk attitude with regard to start-up (table 4). The coefficients can be interpreted as in a logistic regression model, but here there are six transitions being estimated, instead of only one. Five variables are significant in our model. Being optimistic for the profitability of the start-up with a two years perspective, perceived an income from another paid job, being an opportunity entrepreneur increase the likelihood of being in a higher risk taker category. Conversely, being a woman or a necessity entrepreneur show a negative relationship with risk attitude with regard to start-up. Previous studies highlight a higher degree of risk aversion for women (Bhola and al., 2006) and necessity entrepreneurs (Block et al., 2015). Therefore, we can conclude that the attitude toward risk in the context of start-up varies according to their motivation to start a business (opportunity entrepreneurs are more risk-taker than necessity entrepreneurs), which is conform to Block et al. (2015) results.

**Table 5: Ordered logit regression on risk attitude with regard to start-up**

Variables	Coefficients	Std. Error	P-value
Other activity: paid work	1.388	0.668	*
Other activiy: none	ns	ns	ns
<i>Ref: multi entrepreneur</i>			
Gender: female	-0.739	0.381	.

<i>Ref: male</i>			
Necessity entrepreneur: yes	-0.135	0.055	*
<i>Ref: no</i>			
Opportunity entrepreneur: yes	0.117	0.048	*
<i>Ref: no</i>			
Optimism (rentable in the next two years)	0.018	0.009	.

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### 3.1.2. Risk criticality perception

If we focus on the perception of risk criticality by the entrepreneurs, different groups can be highlighted (table 5). Some of risks seem to have a high likelihood to occur and a strong impact on the company in case of occurrence. This mainly relates to personal and business (market and management) risks. Others have a low likelihood to occur, but the consequences in case of realization are also strong. They concern business risks, especially legal actions by stakeholders. Last category includes risks with a low likelihood to occur and a weak impact on the business created. Its relates to finances and external negative effects (stolen goods for example). The following hierarchy can be established in terms of risks criticality: personal risks, business risks (market and management) and hazard risks.

**Table 6: Perception of risks criticality**

	Strong impact	Weak impact
High likelihood	Health issues Affective difficulties Lost of client/supplier Marketing failure Treasury management	
Low likelihood	Wrongdoing Legal actions	Loan refusal Private spending Natural disaster Stolen goods

### 3.1.3. Risk-mitigation strategies

Four risks-mitigation strategies were studied in the survey: hybrid entrepreneurship, networking (advice taken), legal and management tools implemented to reduce risks and insurance subscribed.

First, hybrid entrepreneurship is a process of entrepreneurial entry relatively frequent (24 %). Second, most of entrepreneurs ask for their close relative (61%) or clients (36%) opinion concerning their new company.

Third, they choose to diversify the stakeholders (clients for 86% and suppliers for 52% of them) and to control spending (81%) to manage business risks.

Finally, two main insurance contracts are subscribed: professional civil liability/ multirisk insurance /ten-year warranty (90%), to cover hazard risks and health mutual/professional providence (65%) to cover personal risks.

## 3.2. The profile of risk manager entrepreneurs

### 3.2.1. Four groups of opportunity-necessity entrepreneurs

To better understand the complexity profiles of entrepreneurs, as well as their attitude towards risk, we ran a clustering analysis on the sample, based on Giacomini et al. (2011, 2016) methodology. First, a principal component analysis is conducted on twelve variables which inform about motivations (necessity / opportunity) to create a company. The aim is to verify if these different motivations can be combined with each other. Results show that four dimensions have an eigenvalue larger than one and explain more than two thirds of the variance. The first two dimensions of the principal component analysis account for 44% of inertia. Thanks to the table 6, we can propose some empirical interpretations.

**Table 7: Correlations between variables and factors**

Variables	Dimension 1	Dimension 2	Dimension 3	Dimension 4
Escaping unemployment	0,392	0,015	0,163	<b>0,679</b>
Optaining prestige	<b>0,806</b>	-0,192	0,128	0,148
Being socially recognized	<b>0,790</b>	-0,180	0,033	0,187
Meeting family expectations	0,491	<b>-0,328</b>	-0,097	0,241
Perpetuating the family tradition	0,307	0,031	<b>0,639</b>	-0,098
Earning big money	0,703	<b>-0,270</b>	0,188	<b>-0,431</b>
Increase income	<b>0,689</b>	<b>-0,245</b>	0,128	<b>-0,321</b>
Being autonomous	0,432	0,423	-0,496	-0,138
Creating one's own job	0,519	0,293	-0,511	0,231
Having no boss anymore	0,487	0,085	-0,519	-0,330
Developing new products/services	0,389	<b>0,731</b>	0,208	0,086

Developing new manufacturing processes	0,201	<b>0,698</b>	0,445	-0,151
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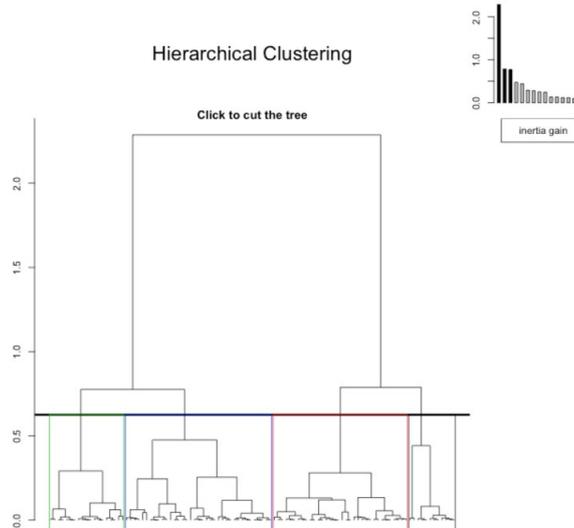
The motivations strongly and positively correlated to the first axis are *obtain prestige, social recognition, increasing income*. The second axis is positively correlated with the *development of products/services and new processes*, but negatively correlated with the willingness to meet family expectations nor to earning a lot of money. Analyze of the axis 3 show that *familial tradition* is the most positively correlated variable, while desire for autonomy and no hierarchy are the most negatively correlated variables. The last axis oppose *escape from unemployment* on its positive side and earning money or increase income on its negative side. To resume, the first axis represents the **search for social recognition** as creation motivation, the second could be interpreted as **market opportunity**, axe 3 deals with **family influence** and the last one express **unemployment** as a reason for creation.

These four axes are similar to those proposed by Giacomini et al. (2011, 2016), except one difference: in our results, the motivation *perpetuating the family tradition* appear negatively correlated to the axis *family influence*. Moreover, we don't found the axis desire for independence and profit search.

Our first two axis, search for social recognition and market opportunity, alone account for 44% of the variability of the sample, which confirms that these two motivations (at the core of our hypotheses H1 and H3) are the most discriminating.

To go further, we run a hierarchical clustering analysis to set up a typology of entrepreneurs. The objective is to group some entrepreneurs according to their similarity to the four dimensions defined above (figure 2). This analysis has been run on software R, by using the Hierarchical Clustering on Principal Components (HCPC) function, which suggests an optimal number of clusters. This function allows to the test the following hypothesis for each motivation: the value in each cluster is not significantly different than the value in the whole sample (v.test). Concerning the motivations considered in our analysis, the null hypothesis of the v.test is always rejected. That means that all motivations impact the defined clusters.

**Figure 3: Dendrogram**



To qualify the clusters, we first have to identify the necessity/opportunity motivations which are correlated to them (table 7).

**Table 8 - The 4 groups of necessity-opportunity entrepreneurs identified**

Clusters	Motivations	v.test*	Necessity/opportunity
A	Market opportunity	-4,178	Opportunity
	Social recognition	-5,634	Necessity
B	Market opportunity	5,213	Opportunity
	Social recognition	-4,211	Necessity
C	Family influence	5,874	Necessity
	Unemployment	-2,073	Necessity
D	Social recognition	7,402	Necessity
	Family influence	-2,082	Necessity

In cluster A, the motivations Market opportunity and social recognition are both negatively correlated and no motivation is positively correlated to Cluster A. We could interpret this cluster as the one which regroups the Strictly Necessity (SN) motivated individual. In Cluster B the motivations Market opportunity is positively correlated. The social recognition motivation is negatively correlated to Cluster B. We could interpret this cluster as the one which regroups the individuals Strictly motivated by Opportunity motivations (S0). In Cluster C the motivations Family influence is positively correlated. The unemployment motivation is negatively correlated to Cluster C. We could interpret this cluster as the one which regroups the individuals motivated by mainly necessity motivations (MN) because an individual can be pushed into entrepreneurship because of the obligation to take over the family business (Bhola et al., 2006). In Cluster D the motivations Social recognition is positively correlated. The Family influence

motivation is negatively correlated to Cluster D. We could interpret this cluster as the one which regroups the individuals mainly motivated by opportunity motivations (MO).

### **3.2.2. Distinctions in term of risks management between Strictly and Mainly opportunity entrepreneurs**

Characteristics of each group are displayed in appendix 2. We focus our analysis on cluster B (Strictly Opportunity entrepreneurs) and cluster D (Mainly Opportunity entrepreneurs).

SO entrepreneurs are slightly younger, have a high propensity to take risk in start-up context and implement more risk-mitigation strategies than the average in order to reduce each type of risks (hazard, personal, market, financial). Notably, this group is more likely to engage in hybrid entrepreneurship (32%) and to take personal insurance.

MO entrepreneurs is a group where female are overrepresented, which can also explain the fact that this group appear more risk-adverse. MO entrepreneurs perceive the severity (but not the probability) of personal and financial risks higher than the average and are less likely to implement market risk-mitigation strategies than the average.

Due to our sample size, these results remain provisional but concerning our hypotheses, we can have some conclusions.

H1: Mainly Opportunity Entrepreneurs, because they are motivated by the search for social recognition, perceive lower personal risks than Strictly Opportunity Entrepreneurs  
This hypothesis is partially verified: MO perceive lower probability that personal risks occur but anticipate a higher impact on the enterprise if the risk occur.

H2: Strictly Opportunity Entrepreneurs are more likely to engage in hybrid entrepreneurship, to reduce personal risks, that they perceived more than Mainly Opportunity Entrepreneurs.  
This hypothesis is partially verified: SO are more likely to engage in hybrid entrepreneurship. To compare with MO, they perceive higher probability that personal risks occur but anticipate a lower impact on the enterprise if the risk occur. Despite this lower perception of personal risks severity, they are also more likely to adopt a personal insurance.

H3: Strictly Opportunity Entrepreneurs, because they are motivated by a market opportunity, perceive lower market risks than Mainly Opportunity Entrepreneurs

This hypothesis is partially verified: SO perceive higher probability that personal risks occur but anticipate a lower impact on the enterprise if the risk occur

H4: Mainly Opportunity Entrepreneurs are more likely to adopt market risk-mitigation strategies in order to reduce market risks, that they perceived more than Strictly Opportunity Entrepreneurs

This hypothesis is not verified: MO are less likely to adopt market risk-mitigation and they also perceive market-risks lower (probability and severity) than the average.

## **Conclusion**

Findings contributes diverse insights into entrepreneurship research and managerial impact.

Previous researches show risk-taking propensity (Block et al., 2015) and human capital (Baptista et al., 2014) are different between entrepreneurs according to their motivation (opportunity / necessity). Our work contributes to the literature, by highlighting the differences in term of a specific skill, the ability to mitigate risks. Several risk-mitigation strategies, concerning the entrepreneur or the enterprise, are considered in the paper, as hybrid entrepreneurship (Raffie and Feng, 2014), insurance and market-risk mitigation strategies (Kim and Vonortas, 2014). Moreover, we propose to complete the proposition of Giacomini et al. (2011, 2016) to refine the too simplistic typology opportunity / necessity. We complete their work by focusing on the distinction between opportunity groups and by investigating the impact of entrepreneur's motivation to start-up on the adoption of risk-mitigation strategies.

Starting a business implies at the same time not " to miss the boat ", that mean put him/herself at risks on a market by definition uncertain, but also not " to seek the boat ", and be able to implement various strategies to reduce these risks and get a strong position on the market (Dickson and Giglierano, 1986; Shepherd et al., 2000). The introduction of proactive risk management approach has numerous advantages. However, it requires the mobilization of resources and skills. It therefore seems difficult to implement at the individual level. Support must also enable new entrepreneurs to become aware of the risks to which they will be exposed and help protect themselves in order to avoid failures and the difficult personal situations that it entails.

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## Appendix 1: Descriptive statistics

Qualitative variables				Quantitative variables			
Names	Modalities	Freq.	Total	Names	Mean	Std.	Total
Genre	Male	62%	102	Age	42,11	10,62	102
	Female	38%					
Education level	Postgraduate	89%	101	Risk	4,59	1,38	102
	Undergraduate	11%					
Family status	In couple	76%	98	Expected profit in two years	71,6	20,88	100
	Single	24%					
Entrepreneurs	Parents	19%	98	Expected Company's survival	68,1	20,23	100
	Family	30%					
	Other	41%					
	None	10%					
Entrepreneurial experience	Serial	25%	102				
	Neo	75%					
Legal status	Individual	28%	101				
	Salaried	9%					
	Company	63%					
Invested amount	< 1000€	16%	102				
	1000-5000€	29%					
	5001-25000€	26%					
	>25000€	22%					
	Non response	7%					
Income	No	24%	100				
	Yes, inacceptable	40%					
	Yes, acceptable	36%					
Professional activity when start up	Employed	54%	101				
	Unemployed	27%					
	None	19%					
Network	Incubator	9%	102				
	Co-working	18%					

## Appendix 2: Clusters' characteristics

Variables	Mean cluster A	Mean cluster B	Mean cluster C	Mean cluster D	Mean total
Gender : female	35%	16%	49%	50%	38%
Education level: postgraduate	91%	89%	84%	100%	89%
Family status: in couple	76%	71%	70%	92%	76%
Age	43,5	40,1	43,3	42,1	42,1
Legal status: individual	12%	21%	47%	25%	28%
Legal status: society	79%	74%	47%	50%	63%
Personality					
Taking risk propensity in start-up context	4,91	4,68	4,35	4,25	4,59
Expected profit in 2 years	73,1%	69,5%	69,2%	78,3%	71,6%
Expected survival of a company in the sector	65,0%	64,2%	69,7%	77,5%	68,1%
Personal-risks criticality perception					
Personal-risks probability	5,27	5,44	5,57	5,00	5,38
Personal-risks severity	7,28	6,89	7,59	8,08	7,42
Market-risks criticality perception					
Market-risks probability	5,65	5,67	5,43	4,45	5,44
Market-risks severity	6,48	6,26	6,95	6,42	6,60
Financial-risks criticality perception					
Financial-risks proba	7,29	7,41	7,22	4,82	7,00
Financial-risks severity	9,15	8,78	9,39	9,25	9,18
Implementation of risks-mitigation strategies					
Hybrid entrepreneurship	22%	32%	22%	25%	24%
Market-risk mitigation	6,50	7,18	5,94	5,08	6,24
Financial-risk mitigation	4,78	5,33	4,30	4,91	4,71
Personal risk mitigation	1,11	1,22	1,03	1,17	1,12
Hazard risk mitigation	1,25	1,50	1,22	1,17	1,27
Professional insurance	94%	94%	89%	100%	91%
Personal insurance	69%	72%	62%	67%	65%

