

La vigilance entrepreneuriale : Le rôle du capital social de l'entrepreneur

Entrepreneurial vigilance: The role of the entrepreneur's social capital

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Résumé

L'objectif de ce travail est d'étudier l'impact du capital social de l'entrepreneur sur sa vigilance entrepreneuriale. En effet, la vigilance entrepreneuriale est une condition préalable à l'identification et à l'exploitation des opportunités, qui à leur tour représentent le cœur du processus entrepreneurial. Nous avons mobilisé la théorie du capital social pour expliquer le rôle des relations sociales des entrepreneurs dans la mise en place et l'efficacité de la vigilance entrepreneuriale. Nous avons mis en évidence le rôle de plusieurs caractéristiques du réseau social de l'entrepreneur dans la mise en place et l'efficacité de sa vigilance entrepreneuriale. Nous avons testé la plausibilité de nos hypothèses à travers une enquête par questionnaire auprès de soixante-sept entrepreneurs tunisiens. Nous avons constaté que le capital social a un impact sur la vigilance entrepreneuriale. En effet, la taille du réseau social de l'entrepreneur, la diversité du réseau, la proportion de liens faibles ainsi que le nombre d'intermédiations (courtages) influencent positivement la vigilance entrepreneuriale. En revanche, la densité du réseau social de l'entrepreneur influence négativement la vigilance entrepreneuriale.

Mots clés : Opportunité ; identification ; entrepreneuriat ; vigilance ; capital social .

Abstract

The objective of this work is to study the impact of the entrepreneur's social capital on his or her entrepreneurial vigilance. We consider that entrepreneurial vigilance is a prerequisite for the identification and exploitation of opportunities, which in turn represent the core of the entrepreneurial process. We have mobilized the theory of social capital to explain the role of entrepreneurs' social relations in the establishment and effectiveness of entrepreneurial vigilance. We have highlighted the role of several characteristics of the entrepreneur's social network in the setting up and the efficiency of his entrepreneurial vigilance. We tested the plausibility of our hypotheses through a questionnaire survey of sixty-seven Tunisian entrepreneurs. We found that social capital has an impact on entrepreneurial vigilance. Indeed, the size of the entrepreneur's social network, the diversity of the network, the proportion of weak ties as well as the number of intermediations (brokerages) positively influence entrepreneurial vigilance.

Keywords : Opportunity ; identification ; entrepreneurial ; vigilance ; social capital .

Introduction

The identification of entrepreneurial opportunities is considered one of the pillars of the entrepreneurial act (Verstraete and Fayolle, 2004; Tremblay 2010; Gaglio 2004). For this concept, we find mainly two research paths. The first research avenue encompasses work that has focused on the factors influencing opportunity identification. Indeed, cognitive variables (Gaglio, 2004; Baron, 1998; Christensen, 1989), learning styles (Corbett, 2002; Dimov, 2003), creativity (Christensen et al., 1994; Hills et al, 1997), prior information and knowledge (Shane, 2000; Corbett, 2002), social capital (Singh et al., 1999; Anderson and Jack., 2002), and entrepreneurial vigilance (Kirzner, 1979; Yu, 1998) influence opportunity identification. The second line of research encompasses work that views opportunity identification as a process. Indeed, this work falls into three main categories. The first category assumes that the opportunity is identified/discovered (Herron & Sapienza, 1992; Kirzner, 1985). The second category considers that the opportunity is recognized/perceived (Baron, 2006; Gaglio, 2004; Krueger, 2000). For the third category, the opportunity is developed/formed/created. Kirzner (1973) states that the origin of all entrepreneurial opportunities is the ignorance of the actors in the market. The result of this ignorance is the emergence of a stock of opportunities that can be exploited. The main task of the entrepreneur is, according to him, to reduce this stock of opportunities. In other words, to balance the market. Kirzner (1979) states that this process is established by the entrepreneur with the help of his entrepreneurial vigilance. In our research we will only be interested in studying the relationship between the social capital of entrepreneurs and their entrepreneurial vigilance. In this context, we have tried in this work to answer the following question: what is the role of social capital in the entrepreneurial vigilance.

The article is organized as follows. First, we present the entrepreneurial vigilance. Secondly, the relation between entrepreneurial vigilance and social capital. Finally, we present the empirical study and its main results.

1. Entrepreneurial vigilance: definition and determinants

1.1 Definition of entrepreneurial vigilance

For (Kirzner, 1979) defines entrepreneurial vigilance as "The ability to notice without searching for opportunities that have been overlooked". The same author (1985), considers

entrepreneurial vigilance as "The motivated propensity of man to formulate an image of the future". For (Ray & Cardozo, 1996), entrepreneurial vigilance is considered as "a propensity to notice and be sensitive to information about objects, incidents, and patterns of behavior in the environment, with special sensitivity to maker and user problems, unmet needs and interests, and novel combinations of resources (Ashford C. Chea, 2008). We define entrepreneurial vigilance as the mechanisms put in place by the entrepreneur to detect changes in the environment and profitable opportunities that were previously ignored. We consider that entrepreneurial vigilance for the entrepreneur is what strategic intelligence is for the company. According to (Tang et al., 2012), entrepreneurial vigilance is a process consisting of three phases: alert scanning and search, alert association and connection, and evaluation and judgment (Florence Guiliani, 2016). The first dimension, scanning and searching for information, helps entrepreneurs build an order for information. It also helps prepare the foundation for developing the cognitive framework (prototypes, cognitive schema, etc.). Entrepreneurs with good scanning and information-seeking skills will have a wide range of knowledge and information (Tang and al., 2012).

The second dimension, the association and linking of dispersed information, allows the entrepreneur to collect the different pieces of a "puzzle" (disparate information) and to link them in order to obtain a picture that reflects reality. The third dimension, making an assessment and judgment, involves evaluating the opportunity and making a decision (Tang and al., 2012).

1.2. The Determinants of Entrepreneurial Vigilance

The factors that can influence, directly or indirectly, entrepreneurial vigilance fall mainly into two categories; individual factors, and environmental factors. As individual factors, the entrepreneur's human capital can influence his or her entrepreneurial vigilance (Davidson and Honig, 2003; Young and Francis, 1991; Roberts, 1991; Shane, 2003). Other researchers assert that the entrepreneur's social capital can influence his or her entrepreneurial vigilance (Honig, 1998; Davidson and Honig, 2003 ; Ardichivili et al., 2003; Hills et al., 1997). Other researchers consider that the social skills of the entrepreneur can influence his or her entrepreneurial vigilance (Lumpkin et al., 2004). Environmental factors have an indirect (moderating) impact on entrepreneurial vigilance (Tang, 2008). This same author states that the entrepreneurial environment facilitates the accumulation of information. Other researchers assert that personal turbulence can indirectly influence entrepreneurial vigilance (Lane and al., 1996; Salancik & Pfeffer, 1978).

-- For the remainder of our research, we will focus only on the impact of the entrepreneur's social capital on his or her entrepreneurial vigilance.

2. Entrepreneurial vigilance and social capital theory

2.1. The theory of social capital

For (Burt, 1992), social capital can be defined as "friends, colleagues, and more general contacts through which you receive opportunities to use your financial and human capital. ». (Lin, 2005) states that social capital "is an individual's investment in relationships with others. We define social capital as the set of human relationships that an individual can use to make a profit. The works that have mobilized the theory of social capital in the field of entrepreneurship have linked it to access to resources (financial, informational, etc.) (Cholet, 2002). In this sense, (Deneuil, 1992) asserts that the value of enterprises lies in the variety of social knowledge and personal relationships of the entrepreneur. In the same vein, (Burt, 1992) adds that an entrepreneur must bring three categories of resources to financial resources, human resources and social resources. Thus, the social capital associated with networks is seen as an important source of privileged information and opportunities (Anderson & Jack, 2002; Burt, 1997; Tang, 2008). In other words, social capital promotes access to information that influences entrepreneurial vigilance (Chollet, 2002; Tang, 2008; Tang and al., 2012). Several parameters can be used to measure social capital. For (Naphiet & Ghoshal, 1998), the study of social capital obviously involves three dimensions:

- ✓ Structural dimension: this dimension is essentially concerned with the overall structure of the social network (Naphiet & Ghoshal, 1998).
- ✓ Relational dimension: This dimension is concerned with the study of relationships between individuals (Naphiet & Ghoshal, 1998).
- ✓ Cognitive dimension: this dimension "explains how actors in a social network combine, exchange, enrich and develop their human and intellectual capital" (Mbarek, 2005). This dimension is based on the knowledge of actors in the same social network (Naphiet & Ghoshal, 1998). In our study, we tried to choose parameters representing these three dimensions of social capital

2.2. The impact of social capital on entrepreneurial vigilance

2.2.1. The size of the entrepreneur's social network

The size of a social network refers to the number of contacts established by a person (Chollet, 2002). Social network size has a significant impact on the ability to identify opportunities (Singh and al., 1999). It also has a significant impact on progress in the creation process

(Greve, 1995; Hansen, 2000) and on growth in the very first years of the firm's life (Hansen, 1991; Ostgaard & Birley, 1996). In the same sense, (Hite and al, 2006) affirm that the size of the network positively influences access to financial resources. Indeed, (Lévesque & White, 2001) assert that the size of the social network positively influences access to various resources. Thus, large networks promote access to resources for members of these networks (Neegard & Madsen, 2004; Shaw & Conway, 2000; Burt, 2000). Therefore, a large relational network size allows the entrepreneur to access a greater amount of resources information (Butler & Hansen, 1991; Shane & Cable, 2002; McFayden & Canello, 2004; Mbarek, 2005). Yet, in order to be more vigilant, the entrepreneur needs access to a significant amount of information (Tang and al., 2012). Hence:

H₁: The size of the entrepreneur's social network positively influences his or her entrepreneurial vigilance.

2.2.2. The density of the entrepreneur's social network

In a dense network, all members of the network know each other; the more individuals know each other, the denser the network (Burt, 1992). (Burt, 1995) studied the consequences of density by introducing the notion of structural holes. He confirms that the greater the number of structural holes, the greater the probability of accessing diversified information. This same author (1992) states that a closed network (a network in which the members know each other well) influences the quantity and quality of information sent/received by the members of this network. Indeed, open networks favor the circulation of information in general, and in particular, new and non-redundant information (Burt, 1997, 2000). In the same sense, (Mercklé, 2004) states that sparse networks provide more distinct information. In other words, the higher the density, the lower the probability of accessing diverse information. Hence:

H₂: the density of the entrepreneur's social network negatively influences his or her entrepreneurial vigilance.

2.2.3. Brokerages

In his work, (Burt, 1992) defines structural holes as: "structural hole is a relationship of non-redundancy between two contacts. The hole is a buffer, like an insulator in an electric circuit. As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping." (Lemieux, 2000) states that in a structural hole situation, two people can only contact each other through the presence of a third person who acts as an intermediary between these two individuals. This third person is called a "Broker" ("a bridge" in other works). (Simmel, 1923) argues that the "Broker" has more competitive

advantages than the other members of the network. According to Burt (2005), the advantages of being a "Broker" are of three kinds:

- Easier and faster access to information;
- Better quality information;
- Control over the dissemination of information.

In our study, we will focus on the number of brokerages in a network. From what has been presented, we can conclude that having a large number of brokerages in a social network facilitates the reception of a significant amount/quality of information; this influences entrepreneurial vigilance (Tang, 2008). Hence:

H₃: the number of intermediations in the entrepreneur's social network positively influences his entrepreneurial vigilance

2.2.4. Weak/strong links

(Granovetter ,1973) discussed the strength of ties between individuals in a social network. He divided ties into three: no ties, weak ties and strong ties. Much of the previous research emphasizes the crucial role of strong ties in the resource acquisition process (Greve & Salaff, 2003; Johannisson, 1998; Welter & Kautonen, 2005). This line of research has focused on financial resources. Other researchers, who have focused on information resources, argue that weak ties enhance access to information (Jensen & Koenig, 2002; Granovetter, 1973). (Jensen and al, 2002) state that the acquisition of information resources is easier via weak ties. Similarly, (Julien et al., 2004) argue that networks based on weak ties transmit more signals about environmental changes. Also,(Fine & Kleinman ,1979) state that weak ties promote the circulation of new ideas and positively affect innovation. Hence:

H₄: Weak ties in the entrepreneur's social network positively influence his or her entrepreneurial vigilance.

2.2.5. The diversity of the entrepreneur's social network

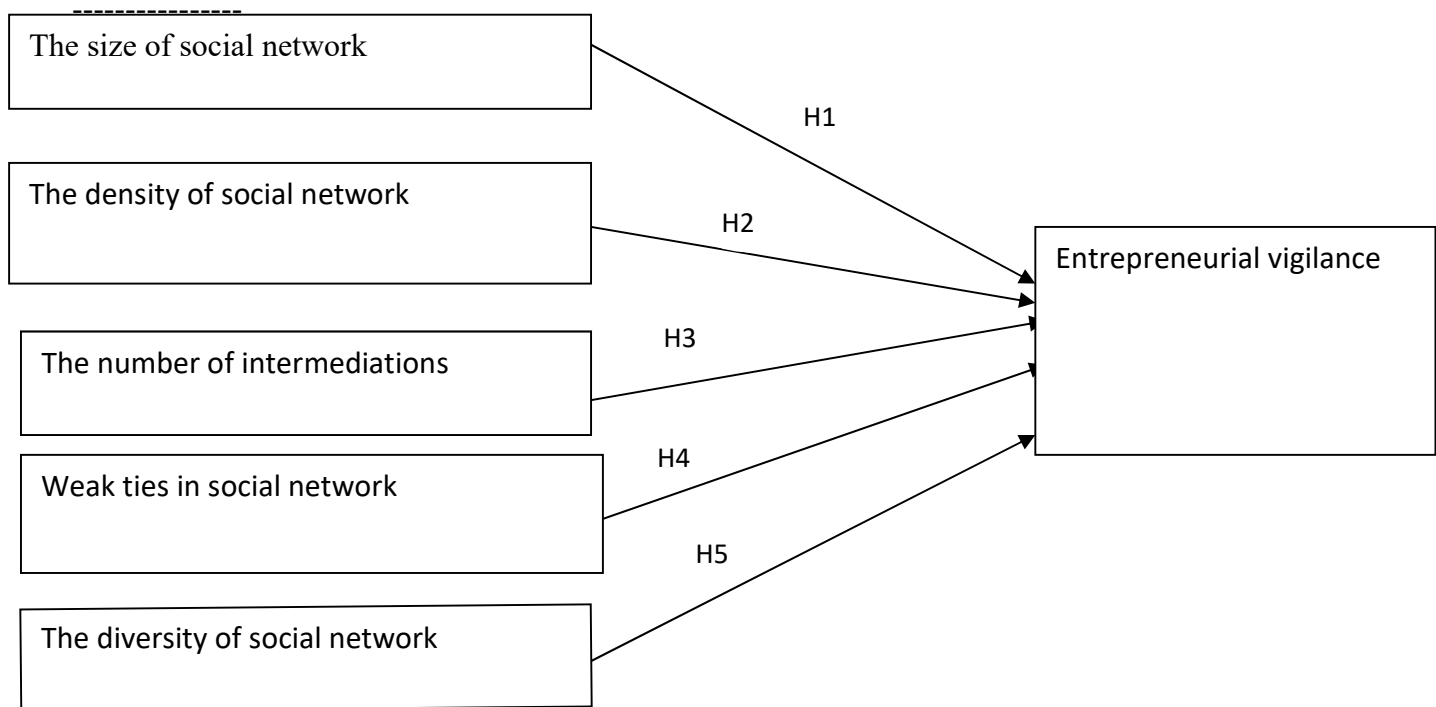
(Mardsen ,1990) states that close relationships (family, close friends,...) provide a low level of new information. According to(Renzulli and al, 2000), the launch of an entrepreneurial activity depends on the heterogeneity of the entrepreneur's social network. Heterogeneity is a representative indicator of diversity (Renzulli and al., 2000). . The diversity of a relational network can be associated with several criteria such as age, gender, professional background, etc. (Lin, 1999). High diversity means integration into different social spheres. This integration constitutes an advantage for the actor (Mardsen, 1987). (Granovetter, 1974), states that people with hierarchically different contacts can access several information resources. In

this sense, (Aldrich & Zimmer, 1986) affirm that the diversity of the network allows the entrepreneur to acquire more information and that the same information reaches the entrepreneur through individuals with varied systems of representation, different interpretations of the same signal, thus increasing the quality of this information. Thus, the diversity of the entrepreneur's social network makes it possible to reduce the redundancy of information by means of the difference in the representations and interpretations made by the different actors within this network. Thus, we can say that a high diversity is generally associated with a good quantity/quality of information. Hence:

H5: The diversity of the entrepreneur's social network positively influences his or her entrepreneurial vigilance.

Thus we can schematize our conceptual model as follows:

Figure N°1: conceptual model



Source: auteurs

3. The study of the relationship between social capital and entrepreneurial vigilance

3.1. Data collection and sample description

We developed a questionnaire that is structured around three parts. The first part deals with the descriptive characteristics of the interviewee. The second part is devoted to measuring the respondent's entrepreneurial vigilance (dependent variable). The third part consists of collecting several pieces of information on the social capital of the interviewee (independent

variables). In our study we chose the non-probabilistic method for the selection of our sample. Based on the usual definition of an entrepreneur, we selected a sample of sixty-seven Tunisian entrepreneurs operating in the textiles and clothing sector. The distribution of our sample is presented in Appendix 3.

3.2. Measurement of variables

3.2.1. The dependent variable: entrepreneurial vigilance

During our research, we found two measurement scales for entrepreneurial vigilance; one is developed by (Kaish and al., 1991), the other is developed by (Tang and al., 2012). We chose to work with the second measurement scale, the one developed by (Tang et al., 2012), for the following reasons:

- First, this is the most recent scale;
- This scale is more detailed than that of (Kaish et al. 1991), indeed; it divides entrepreneurial vigilance into three components;
 - In developing this scale, the authors took into consideration previous work on entrepreneurial vigilance, including the work of Kaish et al. 1991);
- According to (Businetz, 1996), the scales presented previously are inadequate and do not reflect the richness of this construct (entrepreneurial vigilance). A Principal Component Analysis was performed for this measurement scale (Appendix 1). The PCA indicates the existence of three principal axes (which have an eigenvalue > 1). To improve the representation of the items on the different principal axes, we performed a Varimax rotation and eliminated item 3 (this item is represented on two axes).

3.2.2. Independent variables:

In our study, we relied on the name generator technique. This technique, used by several researchers (Burt, 1992; Uzzi, 1997; Burt and al. 2010), involves asking interviewees to list the names of people who have talked with them during a time interval. We have made a modification to this technique to collect more names. This modification consists in dividing the contacts into several categories. In our case, we divided the contacts into five categories:

- Family members,
- Friends,
- Customers and suppliers,
- Colleagues,
- And any other people the interviewee has spoken with, over a period of time.

This technique, with the addition of a few questions, allows us to measure all the independent variables present in our study. In what follows, we will discuss each independent variable and how we measured it.

3.2.2.1. The density of the entrepreneur's social network

Many researchers have been interested in the density of social networks (Coleman, 1988; Burt, 1992; Burt and al., 2010). Burt and al. (2010) created an index to measure the density of a network. This index is presented as follows:

$$d = (\text{number of actors who know each other in pairs}) / (0.5 * n * (n-1))$$

With :

d= density, n= network size.

3.2.2.2. The number of brokerages

This variable is difficult to measure. Indeed, according to our literature review, we have noted the inexistence of empirical work on the number of "brokerages". Based on the definition of a "brokerage" (presented in paragraph 2.2.3.), we note that the existence of a "brokerage" means that :

- Two members "A" and "B" of the same network do not know each other (existence of a "0" in the name matrix between "A" and "B"),
- And, the existence of a third person "C" who knows "A" and knows "B" (existence of a "2" between "A" and "C", and between "C" and "B") So the relationship between "A", "B" and "C" is called "brokerage". "C" is called a The "broker" between "A" and "B". Given the complexity of measuring the number of brokerages in a social network, we developed software (which we called Social Network Analyzer) to measure this variable and all other independent variables

3.2.2.3. The proportion of weak links

Based on (Burt's,1995) and (Kraima TM & Mighri Z,2018) work, we asked each interviewee to specify the nature of the ties that connect him or her with other members of the network, and the nature of the ties between members of the network two by two. The interviewee has the choice between 3 modalities for the nature of the links that connect him/her with the other members of the network (Kraima TM & Mighri Z, 2018) ("0": no links, "1": weak links, "2": strong links). For the nature of the links between the members, the interviewee has the choice

between two modalities ("0": no links, "2": strong links). Another modality has been added: "3": I do not know the nature of the links between two members. Therefore, the proportion of weak links is calculated as follows:

$$\text{Proportion of weak links} = (\text{number of "1"s" in the name matrix}) / (0.5 * \text{size} * (\text{size} - 1))$$

3.2.2.4. The diversity of the entrepreneur's social network

This variable is difficult to establish. The difficulty lies in knowing which social criteria most influence the quantity/quality of information (Chollet, 2002). Some researchers consider that gender influences the quantity/quality of information (Cromie & Birley, 1992). Others have looked at the age of contact (Aldrich and al., 1986). Another group of researchers has focused on the social context that links members of the network to the interviewee (Renzulli et al., 2000). Indeed, Renzulli et al. (2000) created an index to measure the diversity of the social network. In our case, we followed the approach that asserts that diversity is related to the difference in the cognitive aspects of people (Butler & Hansen, 1991; Vallière, 2011). Since the socio-professional category and the sector of activity influence the interpretation of the facts (Aldrich and al., 1986), we have created an index (based on the work of Renzulli and al., 2000) which takes into consideration the socio-professional category and the sector of activity of the persons mentioned by the interviewee and which is presented as follows

$$\text{Combined diversity (CSP, SA)} = 1 - \sum_{i=1}^n \left[\frac{\text{nombre de}}{\text{Taille}} \right]$$

With i and j = (see Appendix 2).

In order to improve the goodness of fit of our model, we introduced "age of respondent" as a control variable.

3.3. The analysis method

Based on our research objective, we chose to use multiple linear regressions to test the research hypotheses. However, we found a multi-collinearity problem between the size of the entrepreneur's social network and the number of intermediations. For this we will test six different models (Robert P. Singh and al, 2000)

- The first model will study the regression of the first dependent variable (the first component of entrepreneurial vigilance; Scanning and Information Seeking) on the size of the

entrepreneur's social network, the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the proportion of weak ties, and the age of the respondent (Robert P. Singh and al, 2000).

- The second model will study the regression of the first dependent variable (the first component of entrepreneurial vigilance; Scanning and Information Seeking) on the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the number of intermediations, the proportion of weak ties, and the age of the respondent (Robert P. Singh and al, 2000).

- . - The third model will study the regression of the second dependent variable (the second component of entrepreneurial vigilance; Association and linkage of scattered information) on the size of the entrepreneur's social network, the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the proportion of weak ties, and the age of the respondent (Robert P. Singh and al, 2000)

- The fourth model will study the regression of the second dependent variable (the second component of entrepreneurial vigilance; Association and linkage of dispersed information) on the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the number of intermediations, the proportion of weak ties, and the age of the respondent. (Robert P. Singh and al, 2000)

- The fifth model will investigate the regression of the third dependent variable (the third component of entrepreneurial vigilance; Assessment and Judgment) on the size of the entrepreneur's social network, the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the proportion of weak ties, and the age of the respondent (Robert P. Singh and al, 2000).

- The sixth model will study the regression of the third dependent variable (the third component of entrepreneurial vigilance; Evaluation and Judgment) on the density of the entrepreneur's social network, the diversity of the entrepreneur's social network, the number of intermediations, the proportion of weak ties, and the age of the respondent (Robert P. Singh and al, 2000).

4. Results and discussion

4.1. Tests for multiple linear regression

Before presenting and interpreting the estimation results of our models, it is important to check some tests related to multiple linear regressions. We used the graphical method to check the linearity of the models. The graphs show that all the independent variables are

linear with the three dependent variables. We performed a multi-collinearity test for the independent variables. We notice that there is no strong collinearity between the independent variables for models M1, M3 and M5 (the highest VIF is 1.506). Similarly for M2, M4 and M6 (the highest VIF is 1.714). Other tests were performed to verify the homoscedasticity, the non-autocorrelation of the residuals and the normality of the residuals. These tests are presented in Appendix 4.

The results show that the hypotheses related to the normality of the residuals (KolmogorovSmirnov) and to the non-autocorrelation of the residuals (Durbin-Watson) have been validated. On the other hand, these results show that we have a heteroskedasticity problem. As a remedy to this problem, we applied the approach of White (1980) for the models M1, M3 and M4.

4.2. Results

The results of the multiple linear regressions are presented in the following table1:

TABLE N°1: Linear regression results for the six models

Models	M13	M2	M31	M41	M5	M6
V. D. V. I.	Scanning and searching for information		Association and linking of information dispersed		Evaluation and judgement	
Network size social	-	0,084*	-	0,091*	-	0,050
Number intermediation	0,004*	-	0,002** *	-	0,001***	-
Density of the social network	-2,541*	- 2,304**	-0,319	0,008	-1,556	-1,399
Diversity of social network	1,166	1,683** *	1,738** *	1,549** *	1,009	1,164
Proportion of weak links	0,312	-0,712	1,525	0,600	2,804**	2,227** *
Age	-0,009	-0,006	0,002	0,011	0,001	0,004
R ²	0,485	0,385	0,189	0,251	0,209	0,198
Adjusted R ²	0,443	0,334	0,123	0,189	0,144	0,132
F	11,528 *	7,645*	2,852**	4,093*	3,229**	3,017**
p-value	0,000	0,000	0,022	0,002	0,011	0,016

SOURCE: auteurs

NB: (*) significant at the 1% threshold, (**) significant at the 5% threshold, (***) significant at the 10% threshold. 3 For M1, M3 and M4 we applied the approach of (White, 1980).

The results show that the six models are globally significant. This means that we cannot reject the null hypothesis related to the overall significance of the six models at the 5% threshold.

4.3. Discussion

The size of the entrepreneur's social network positively influences his or her entrepreneurial vigilance. Indeed, the results of the estimations of the M2 model show that the size of the entrepreneur's social network positively influences his ability to scan and search for information. Similarly for model M4, the size of the entrepreneur's social network positively influences his capacity to associate and link dispersed information. These results converge with other research (Burt and al. 2010; Chollet, 2002). The density of the entrepreneur's social network negatively influences his or her entrepreneurial vigilance. Indeed, the results of our study show that the density of the entrepreneur's social network negatively influences his or her ability to scan and search for information (M1 and M2). These results are in line with other researchers (Burt, 1995; 2000). According to the results obtained, the number of brokerages positively influences entrepreneurial vigilance. Indeed, the number of brokerages positively influences the three components of entrepreneurial vigilance ("Scanning and searching for information", "Association and linking of dispersed information" and "Evaluation and judgment") (see M1, M3 and M5). These results converge with other research (Burt, 1992; 1995). The proportion of weak ties positively influences entrepreneurial vigilance. Indeed, the proportion of weak ties in a network positively influences the third component of entrepreneurial vigilance (Evaluation and judgment) (see M5 and M6). These results are consistent with the findings of several other researchers (Burt, 1995; Granovetter, 1973). The diversity of the entrepreneur's social network positively influences his entrepreneurial vigilance. Indeed, the results of our study show that the diversity of the entrepreneur's social network positively influences his or her ability to scan and search for information (M2), and his or her ability to associate and link information (M3 and M4). These results converge with other research (Renzulli and al. 2000, Aldrich and al., 1986). According to the results previously presented, the age of the respondent has no impact on entrepreneurial vigilance. Indeed, all estimation results for this control variable are not significant.

Conclusion

The objective of our research was to highlight the role of entrepreneurial social capital in opportunity identification by focusing on the concept of "entrepreneurial vigilance". The results of our study show that the entrepreneur's social capital has an impact on his entrepreneurial vigilance. Indeed, the size of the entrepreneur's social network, the diversity of the entrepreneur's social network, the proportion of weak links as well as the number of intermediations (brokerages) positively influence entrepreneurial vigilance. On the other hand, the density of the entrepreneur's social network negatively influences his entrepreneurial vigilance. It seems to us very important to study the possible relations between entrepreneurial vigilance and its other antecedents (human capital, social competence, entrepreneurial environment, etc.), on the one hand, and its consequences (identification, evaluation and exploitation of opportunities, as well as the quality of the identified opportunities and their effective exploitation), on the other hand, and this in a dual way or as a complete model where all the antecedents and all the consequences will be combined. On the managerial level, these contributions can be exploited both by entrepreneurs, and by public authorities seeking to set up mechanisms to help entrepreneurs in their entrepreneurial process. This work offers entrepreneurs a number of actions that can be carried out to strengthen the effectiveness of each component of vigilance entrepreneurial.

ANNEXES

Appendix 1: Principal Component Analysis for Entrepreneurial Vigilance

		Components		
		1	2	3
Scanning and searching for information				
Item 1	I frequently interact with others to acquire new information.		,838	
Item 2	I always keep an eye out for new ideas business when searching for information.		,753	
Item 4	I surf the internet every day.		,531	
Item 5	I am passionate about finding information.		,797	
Item 6	I can be very helpful in finding information.		,626	
Connecting dispersed information				
Item 7	I often make new connections and see new or emerging relationships between various pieces of information.			,639
Item 8	I see the links between the different elements of information that are apparently unrelated.			,691
Item 9	I am good at linking disparate pieces of information together.			,774
Item 10	Often I see connections between different pieces of information that were not previously connected.			,775

Evaluation and judgement				
Item 11	I have a good feel for potential opportunities.	,754		
Item 12	I can distinguish between profitable opportunities and those that are not so profitable.	,730		
Item 13	I have an extraordinary ability to sense profitable opportunities.	,825		
Item 14	I have a talent that allows me to distinguish the opportunities of high value from those of lower value.	,792		
Item 15	Faced with multiple opportunities, I am able to select the right ones.	,748		
Eigenvalues		5,675	1,895	1,358
of variance		40,537	13,535	9,702
Cumulative variance %.		40,537	54,073	63,775
<ul style="list-style-type: none"> KMO = 0.765 Chi-2 = 471.149 // p-value = 0.000 Crombach's Alpha = 0.879 				

Appendix 2: Socio-professional category and sector of activity

$i = \{1, 2, \dots, 10\}, j = \{1, 2, \dots, 10\}$ and :

CSP1 =	Middle and upper management	SA1 =	Banking, insurance and services financial
CSP2 =	Employee	SA2 =	Construction and real estate
CSP3 =	Teacher	SA3 =	Trade and distribution
CSP4 =	Student	SA4 =	Communication, media and printing
CSP5 =	Public servant	SA5 =	Studies, training and advice
CSP6 =	Worker	SA6 =	Industry
CSP7 =	Liberal profession	SA7 =	Computer, telecommunication and multimedia
CSP8 =	Retired	SA8 =	Services
CSP9 =	No profession	SA9 =	tourism, travel and leisure
CSP10 =	Other	SA10 =	Other

Appendix 3: General characteristics of our sample

Interviewee profiles		Percentage
Type	Male	- 79,1 %
	Woman	- 20,9 %
Age	- [18, 29]	- 44,8 %
	- [30, 39]	- 14,9 %
	- [40, 50]	- 17,9 %
	- > 50	- 22,4 %
Experience in the industry	- < 1 year	- 4,5 %
	- 1, 3] years	- 34,3 %
	- 4, 5] years	- 9 %
	- 6, 10] years	- 13,4 %
	- 10 years	- 38,8 %

Appendix 4: Multiple linear regression tests

Tests				
Models	White		Kolmogorov-Smirnov (p-value)	Durbin-Watson
	F	Prob(F)		
M1	1,950	0,031	0,200	1,701
M2	1,672	0,075	0,200	2,180
M3	3,019	0,000	0,200	1,820
M4	2,976	0,001	0,200	1,895
M5	1,049	0,430	0,178	2,094
M6	3,017	0,016	0,178	2,072

BIBLIOGRAPHY

Akrout F. (2010), "Les Méthodes des Equations Structurelles", Coopi, 1st edition.

Aldrich and J. Moody (2000), "Family matters: gender, networks, and entrepreneurial outcomes", *Social Forces*, Vol.79, N°2, pp. 523-546.

Aldrich, H.E. and Zimmer, C. (1986), "Entrepreneurship Through Social Networks" In D. Sexton and R. Smilor (eds.), *The Art and Science of Entrepreneurship*, pp.3-23. New York: Ballinger.

Anderson, A. R. and Jack, S. (2002), "The Articulation of Entrepreneurial Social Capital: A Glue or a Lubricant," *Entrepreneurship and Regional Development*, Vol. 14, No. 3, pp. 193-210.

ArdichiviliA., Cardozo, R.-N. and Ray, S. (2003), "A theory of entrepreneurial opportunity identification and development", *Journal of Business Venturing*, Vol.18, N°1, pp.105-123.

Ashford C. Chea (2008)Entrepreneurial Venture Creation: The Application of Pattern Identification Theory to the Entrepreneurial Opportunity-Identification Process *International Journal of Business and Management* February, 2008

Baron R.A. (2006), "Opportunity recognition as pattern recognition: how entrepreneurs "connect the dots" to identify new business opportunities". *Academy of management perspectives*, Vol.20, N°1, pp. 104-119.

Baron, R.A. (1998), "Cognitive mechanisms in entrepreneurship: why and when entrepreneurs think differently than other people". *Journal of Business Venturing*, Vol.13, N°4, pp. 275-294.

Blau P. M. (1977), "Inequality and Heterogeneity: A Primitive Theory of Social Structure", Free Press. Bunt G., Tilburg A., Elfring T. and Bhagavaluta S. (2010), "How social and human capital influence opportunity recognition and resource mobilization in India's handloom industry?", *Journal of Business Venturing*, Vol. 25, No. 3, pp.245-260.

Burt R.S. (1995), "Social capital, structural holes and the entrepreneur", *Revue Française de Sociologie*, Vol.36, N°4, p. 599-628.

Burt R.S. (2000), "The network structure of social capital", in Sutton R.I. and Staw B.M. Ed *Research in organizational behavior*, Vol. 22, Greenwich, CT:JAI Press, 93p.

Burt R.S. (2005), "Brokerage and Closure", Oxford University Press. Burt, R.S. (1992), "Structural Holes: The Social Structure of Competition", Cambridge, MA: Harvard University Press.

Burt, R.S. (1997), "The contingent value of social capital", *Administrative Science Quarterly*, Vol.42, N°2, pp.339-365.

Busenitz, L. W. (1996), "Research on entrepreneurial vigilance". *Journal of Small Business Management*, Vol.34, No.4, pp.35-44.

Butler J.E. and G.S. Hansen (1991), "Network evolution, entrepreneurial success, and regional Development", *Entrepreneurship and Regional Development*, Vol.3, N°1, pp. 1-16.

Chollet B. (2002), "L'analyse des réseaux sociaux : quelles implications pour le champ de l'entrepreneuriat ? ", 6th International Francophone Congress on SMEs - October 2002 - HEC

- Montreal Christensen, P. S. (1989), "Strategy: Opportunity identification and entrepreneurship", PhD thesis, Aarhus University Institute of Management, Denmark.

Christensen, P., Madsen, O. and Peterson, R. (1994), "Conceptualizing Entrepreneurial Opportunity Identification." In G.E. Hills (ed.), *Marketing and Entrepreneurship: Research 23 Ideas and Opportunities*, London: Quorum Books. Coleman, J.S. (1988), "Social Capital in the Creation of Human Capital," *American Journal of Sociology*, Vol.94, pp.95-120.

Corbett, A.C. (2002), "Recognizing high-tech opportunities: a learning and cognitive approach". In W. D. Bygrave, C. G. Brush, P. Davidsson, J. Fiet, P. G. Greene, R. T. Harrison, M. Lerner, G. D. Meyer, J. Sohl, and A. Zacharakis (eds.), *Frontiers of entrepreneurship*, pp. 49-60, Wellesley, Mass: Babson College.

Cromie S. and S. Birley (1992), "Networking by female business owners in Northern Ireland", *Journal of Business Venturing*, Vol.7, No.3, pp. 237-251.

Davidsson, P., & Honig, B. 2003, "The role of social and human capital among nascent entrepreneurs". *Journal of Business Venturing*, Vol.18, pp.301-331.

DENIEUIL P. (1992), " Les entrepreneurs du développement ", Editions l'Harmattan

Dimov, D. P. (2003), "The nexus of individual and opportunity: Opportunity recognition as a learning process. In W. D. Bygrave, C. G. Brush, P. Davidsson, J. Fiet, P. G. Greene, R. T. Harrison, M. Lerner, G. D. Meyer, J. Sohl, and A. Zacharakis (Eds.), *Frontiers of entrepreneurship research* (pp. 410-420). Wellesley, MA: Babson College. Fine G. and Kleinman S. (1979), "Rethinking subculture: an interactionist analysis", *American Journal of Sociology*, Vol.85, N°1, pp. 1-20.

Florence Guiliani. La vigilance entrepreneuriale : les antécédents liés au sommeil du dirigeant de PME. Gestion et management. Université Montpellier, 2016. Français. ffNNT : 2016MONTD014ff. fftel-01498211f

Gaglio, C.M. (2004), "The Role of mental simulations and counterfactual thinking in the opportunity identification process", *Entrepreneurship theory and practice*, Vol.28, N°6, pp.533-552.

Granovetter M. (1973), "The strength of weak ties", *American Journal of Sociology*, Vol. 78, N°6, pp.1360-1380.

Granovetter M.S. (1974), "Getting a Job: A Study of Contacts and Careers," Cambridge, MA: Harvard Univ. Press.

Greve A. (1995), "Networks and entrepreneurship - An analysis of social relations, occupational background, and use of contacts during the establishment process", *Scandinavian Journal of Management*, Vol.11, N°1, pp. 1-24.

Greve A. and Salaff J.W. (2003), "Social networks and entrepreneurship", *Entrepreneurship Theory & Practice*, Vol. 28, N°1, pp. 1-22.

Hansen E.L. (1991), "Structure and process in entrepreneurial networks as partial determinants of initial new venture growth", *Frontiers of entrepreneurship research*, Babson College, pp. 320-334.

Hansen E.L. (2000), "Resource Acquisition as a Startup Process: Initial Stocks of Social Capital and Organizational Foundings," *Frontiers of Entrepreneurship Research*, Babson College, pp.7.

Herron L. and Sapienza H. (1992), "The entrepreneur and the initiation of new business venture launch activities", *Entrepreneurship Theory and Practice*, Vol.17, N°1, pp. 49-55

Hills, G.E., Lumpkin, G.T., & Singh, P.R. (1997). Opportunity recognition: perceptions and behaviors of entrepreneurs. *Frontiers of Entrepreneurship Research* (168-182). Wellesley, MA: Babson College. Hite J.M., Hite S., Jacob J., Rew J., Muguimu C. and Nsubuga Y. (2006), "Building bridges for resource acquisition: Network relationship among headteachers in Ugandan private 24 secondary schools", *International Journal of Educational Development*, Vol.26, N°5, pp. 495-512.

Honig, B. (1998), "What determines success? Examining the human, financial, and social capital of Jamaican micro-entrepreneurs", *Journal of Business Venturing*, Vol.13, N°5, pp.371-394.

Jenssen J.I. and Koenig H.F. (2002), "The effect of social networks on resource access and business start-ups", *European Planning Studies*, Vol. 10, N°8, pp.1039-1046.

Johannisson, B. (1998), "Business formation- a network approach", *Scandinavian Journal of management*, Vol.49, N°3-4, 83-89.

- Kaish, S. and Gilad, B. (1991), "Characteristics of opportunities search of entrepreneurs versus executives: sources, interests, general vigilance", *Journal of Business Venturing*, Vol. 6, N°1, pp. 45-61.
- Kirzner, I. M. (1973), "Competition and entrepreneurship", Chicago: University of Chicago press.
- Kirzner, I. M. (1979), "Perception, opportunity, and profit", Chicago: University of Chicago Press.
- Kirzner, I.M. (1985), "Discovery and the Capitalist Process", Chicago: University of Chicago Press
- Krueger N.F.(2000), "The cognitive infrastructure of opportunity emergence", *Entrepreneurship Theory and Practice*, Vol.24, N°3, pp. 5-23
- Kraima TM and Mighri Z(2018) Social Capital: A Stimulant for the Recognition of New Entrepreneurial Opportunities, Case of Tunisia South-West, *Journal of Economic and Business Studies (JEBS)*
- Lane, D., Malerba, F., Maxfield, R., and Orsenigo, L. (1996), "Choice and action", *Journal of Evolutionary Economics*, Vol.6, pp.43-76.
- Lemieux V. (2000), "A quoi servent les réseaux sociaux?" Laval: Les Presses de l'Université Laval (Diagnostic, 27).
- Lévesque M. and White D. (2001), "Social Capital, Human Capital and the Exit from Social Assistance for Long-Term Recipients", *Canadian Journal of Sociology*, Vol. 26, N°2, pp.167-192.
- Lin N. (1999), "Social networks and status attainments," *Annual Review of Sociology*, Vol. 25, pp. 467-487.
- Lin, N. (2005), "Social Capital: a theory of social structure and action", Cambridge: Cambridge university press.
- Lumpkin, G.H., Hills, G.E. and Shrader, R. (2004), "Opportunity recognition". In H.P. Welsch (Ed.) *Entrepreneurship: the way ahead*, pp.73-90.
- Marsden P.V. (1987), "Core Discussion Networks of Americans," *American Sociological Review*, Vol.52, pp. 122-131.
- Marsden, P. V. (1990), "Network data and measurement", *Annual Review of Sociology*, Vol.16, pp. 435-463.
- Mbarek M.K. (2005), "Influence des réseaux d'administrateurs sur la stratégie de la firme : application au cadre des partenariats stratégiques", PhD thesis, University of Burgundy.
- McFadyen, M. A., Cannella A. A. Jr. (2004), "Social capital and knowledge creation: Diminishing returns to the number and strength of exchange relationships," *Academy of Management Review*, Vol. 47, N°5, 735-746

- Mercklé.P. (2004), "sociologie des réseaux sociaux", Edition La découverte, Paris.
- Naphiet J. and Ghoshal S. (1998), "Social capital, intellectual capital and the organizational advantage", *Academy of Management Review*, Vol. 23, N°2, pp.242-266.
- Neergaard.H., and Madsen.H. (2004), "Knowledge intensive entrepreneurship in a social capital perspective", *Journal of Enterprising Culture*, Vol.12, N°2, pp.105-125.
- OECD (Organization for Economic Cooperation and Development), (1998), "Stimulating Entrepreneurship", OECD Edition, Paris (first edition: 1906)
- Ostgaard T.A. and S. Birley (1996), "New venture growth and personal networks", *Journal of Business Research*, Vol.36, N°1, pp. 37-50.
- Ray, S. and Cardozo, R. (1996), "Sensitivity and creativity in entrepreneurial opportunity recognition: a framework for empirical investigation", Presented at the Sixth Global Entrepreneurship Research Conference, Imperial College, London. Renzulli L.A., H.E.
- Rob singh, (2000)opportunity recognition through social network characteristics of entrepreneurs , Babson College. March 2000. URL:
https://fusionmx.babson.edu/entrep/fer/papers99/X/X_B/X_B%20Text.htm
- Roberts, E. (1991), "Entrepreneurs in High Technology: Lessons from MIT and Beyond", New York: Oxford University Press.
- Salancik, G.R., and Pfeffer J. (1978),"A social information processing approach to job attitudes and taskDesign", *Administrative Science Quarterly*, Vol. 23, No. 2, pp.224-253.
- Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003), "Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms". *MIS Quarterly*, Vol.27, N°2, pp.237-263.
- Shane S. and Cable D. (2002), "Network ties, reputation, and the financing of new ventures, *Management Science*, Vol. 48, N°3, pp.364-381.
- Shane, S. (2000), "Prior Knowledge and the Discovery of Entrepreneurial Opportunities, *Organization Science*, Vol.11, N°4, pp. 448-469.
- Shane, S. (2000), "Prior Knowledge and the Discovery of Entrepreneurial Opportunities, *Organization Science*, Vol.11, N°4, pp.448-469.
- Shane, S. (2003), "A general theory of entrepreneurship". Northampton, MA: Edward Elgar.
- Shaw.E. and Conway.S. (2000), "Enterprise and Small Business", in Carter, Sara and JonesEvans (Eds), Pearson Education, Harlow, pp.367-383.
- Simmel G. (1923), "The Sociology of Georg Simmel", New York, Free Press.

Singh, R. P., Hills, G. E., Hybel, R. C., & Lumpkin, G. T. (1999). "Opportunity recognition through social network characteristics of entrepreneurs". In P. D. Reynolds, W. D. Bygrave, S. Manigart, C. Mason, G. D. Meyer, H. T. Sapienza and K. Shaver (eds.), *Frontiers of entrepreneurship research*. MA: Wellesley: Babson College.

Tang J., Kacmar K.M. and Businetz L. (2012), "Entrepreneurial vigilance in the pursuit of new opportunities", *Journal of Business Venturing*, Vol. 27, No. 1, pp. 77-94.

Tang, J. (2008), "Exploring the antecedents of entrepreneurial vigilance: interactions between individual and environmental characteristics", 22nd USASBE Conference, June 10, 11, 12,13, 2008, San Antonio,Tx 26

Tremblay M. (2010), "Collective Identification of Entrepreneurial Opportunities: An Exploratory Study", PhD Thesis, Université du QUÉBEC À TROIS-RIVIÈRES.

Uzzi B. (1997), "Social structure and competition in interfirm networks: the paradox of Embeddedness", *Administrative Science Quarterly*, Vol.42, N°1, pp. 35-67.

Valliere, D. (2011), "Towards a schematic theory of entrepreneurial vigilance," *Journal of Business Venturing*, doi:10.1016/j.jbusvent.2011.08.004.

Venkataraman, S. (1997), "The Distinctive Domain of Entrepreneurship Research", In Katz, J. and Brockhaus, R. (eds.). *Advances in Entrepreneurship, Firm emergence, and growth*, JAI Press.

Verstraete T. and Fayolle A. (2004), "Quatre paradigme pour cerner le domaine de recherche en entrepreneuriat", 7ème Congrès International Francophone en Entrepreneuriat et PME, 27, 28, 29 octobre 2004-Montpellier.

Welter F. and Kautonen T. (2005), "Trust, social networks and entreprise development: Exploring evidence from east and west Germany", *International entrepreneurship & Management Journal*, Vol.1, pp.367-379.

White H. (1980), "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica*, Vol. 48, No. 4, pp. 817-838.

Young, R., and Francis, J. (1991), "Entrepreneurship and innovation in small manufacturing firms," *Social Science Quarterly*, Vol.72, N°1, pp.149-162.

Yu, T.F. (1998), "Economic Development in Latecomer Economies: An Entrepreneurial Perspective". *Development Policy Review*, Vol. 16, No. 4, pp.353-372

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