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Relationship between Relational Network, Age of Contractor and Access to External Resources

GHODBANE ADEL

Department of Management, Ghraiba Sfax Tunisia, 3034, Tunisia, Tel: 20827373;

E-mail: adelghodbane@gmail.com

BEL HADJ TAREK

Department of Management, Ghraiba Sfax Tunisia, 3034, Tunisia

AFFES HABIB

Department of Management, Ghraiba Sfax Tunisia, 3034, Tunisia

Abstract

This paper aims to analyze the benefits of relational and personal network of a contractor on his access to external resources. Moreover, we tried to test whether this relationship is skewed by the contractor's age. The originality of our approach lies in the choice of the context which our empirical analysis is applied and related to the Tunisian context. In addition, we have integrated a range of theoretical approaches that have examined the concept of relational and personal network particularly, the strength of ties of Granovetter, the theory of structural holes of Burt and the theory of social resource.

Keywords: Relational and Personal Network; External Resources; Contractor;

Tunisia

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INTRODUCTION

In a globalized, open and increasingly competitive economy, the mobilization of the relational network is essential especially for SMEs. These later, are often presented as an organization without means of action, because of its size. To this end, one of the levers to overcome these limits lies in the ability of staff to mobilize its contacts, relationships, to acquire the resources necessary to the performance of its business. In general, social relations and personal contacts that individuals develop throughout their lives have a value to their organizations as they provide access to advantages and various benefits.

This is why we feel it is appropriate in this chapter to analyze the link between the mobilization of the relational network and access to external resources. To do this, this paper is organized into three main paragraphs: first, we will try to review the literature that analyzed the relational network. Then, we will focus in the second paragraph on the impact of the relational network access to external resources. Finally, we will try in the third paragraph to empirically analyze this link by referring to the most appropriate statistical and econometric techniques.

THEORETICAL FRAMEWORK OF THE CONCEPT OF RELATIONAL AND PERSONAL NETWORK

The literature on social networks is abundant and it contains a number of theories and approaches to identify this area. In fact, the concept of the relational network has been rigorously analyzed by three branches of research: The strength of ties of Granovetter [1], the theory of structural holes of Burt [2] and the theory of social resources.

According to Granovetter [1], the concept of the strength of ties is apprehended as "a combination of the amount of time, emotional intensity, intimacy and reciprocal services which characterize these ties." This concept was taken up later by Chollet [3] focusing specifically on the nature of the strength of ties, low or high.

Chollet [4] states that weak ties are only effective by themselves but the proportion of weak ties in a network and therefore, the structure of the personal network, which is important. However, much research in sociology and management science adopts Granovetter's approach to say that "the weak ties are not good because they allow reaching distant individuals in the social structure, but simply because that they involve specific dyadic relationships that have value in itself".

Moreover, to describe the relationship between the strength of ties and the concept of

relational network, Granovetter [5] has shown that it largely determines the resource acquired by a contractor. In this regard, this author argues that despite its type of low, these links in the form of a simple contact with certain people can lead to intimate relationships, as well as on the basis of hazardous knowledge, there may be an accumulation of a set of high-value information and identification of new opportunities. In contrast, the strong type of lies from relationships with close friends may be the cause of the closed areas because the friends of my friends are my friends because the opportunities which we see are large in which information can be spread with a more intense pace, but redundantly.

Granovetter [6] appreciated four dimensions of the strength of ties: The amount of time, emotional intensity, intimacy, and reciprocal services. The types which are often adopted are the frequency of contact and the emotional intensity. By testing three of these four dimensions, Marsden and Campbell [7] concluded that the perfect indicator to measure the strength of a link is the emotional intensity. For his part, Johannesson [8] proposed a range of other indicators namely the regularity of the use of relationships, level of maturity, confidence, and nature of past experience. Moreover, Jenssen and Koenig [9] quantified the strength of a link by the degree of friendship by claiming that knowledge refers to a low link while a friendship refers to a strong link.

Regarding the theory of structural holes, Burt [2] is interested in studying the overall structure of the personal network of Ego. For this author, it is the rich network structures in structural holes that are most effective. The concept of structural hole indicates the absence of links between non-redundant contacts that is to say the contacts that facilitate access and to people or other resources. For Burt [2], this type of structure promotes access to a competitive advantage particularly when it has more exploitable opportunities in terms of information, control and visibility [10].

However, when a given structure is rich in structural holes it allows people to better access to relevant information and exploitation of opportunities particularly preferred from the side of moving up of Ego [2]. For his part, Coleman [11] considers that a dense network is likely to implement a regulatory framework for the individual facilitating a better understanding of the expectations of the structure to which it belongs and a greater absorption of values of the latter, which has a positive effect on his career [12].

Finally, the theory of social resources was established a priori by Lin, et al. [13]. For these authors, it is not the nature of the link itself will assist the individual in achieving his goal, but the resources available through this link. This theory of social resources is part of the pyramidal vision of society of Bourdieu in which the more one is at the top of the pyramid the more resources are obtained. An interpretation that can be made of this theory is that the more the person with whom you are in contact is high placed in the organization compared to Ego, the more it will bring him useful resources. This theory can also be applied in a horizontal vision of the organization.

In this regard, the attributes of the contact [14] are highlighted and that can arise through many configurations, depending on its function or organizational unit [14-16], its level, its field of technical qualification [17], or its geographical position.

These three theories indicated are strongly related. Indeed, the theories of Lin [18] and Burt [2] are continuations of the theory of Granovetter [1]. The first two theories processes the non-redundant as a characteristic of personal network of the individual. By opposition, in the social resources theory the attributes of contacts are different from those of Ego and are applied them in the structural holes theory. The strength of weak ties is only one way to get that non-redundancy, in particular with the principle of homophily [19] that characterizes relations.

ROLE OF THE RELATIONAL AND PERSONAL NETWORK IN ACCESS TO EXTERNAL RESOURCES

The resources are the cornerstones of the existence and growth of a business [20]. To this end, Barney [21] distinguishes between three categories of resources which are physical capital resources, human capital resources and organizational capital resources. For his part, Moore [22] conducts another classification between intellectual resources, physical resources and finally capital resources. This classification is wider in Greene analysis, Brush, and Brown [23] by distinguishing between six categories of resources which are human, social, financial, physical, technological and organizational resources. In fact, these resources were also subsequently recommended by Hite [24] but adding those of political and intellectual type.

Furthermore, Burt [2] highlighted three categories of resources in the entrepreneurial process: First, the financial resources they are cash, bank deposits, credit lines. Then, human resources in the form of the possessed skills, charisma and intelligence, strengthened by the skills acquired through experience and education. Finally, social resources originating from the different relations of the contractor with the other people in the form of contact with friends, colleagues and customers from which arise new opportunities transforming human and financial resources into profit.

Many studies have shown the essential role played by personal networks of entrepreneurs in the elimination of informational and institutional gaps and effective mobilization of external resources [25-27]. This idea was previously advocated by Dubini and Aldrich [28] who argue that "Mobilizing Resources to pursue opportunities requires contacts, knowledge and confidence. Mobilizing resources also means asking others to provide resources and efforts to a company whose future is uncertain. Entrepreneurship is therefore essentially a networking activity.

The potential impact of personnel network of contractor on resource access requires an analysis of the parameters characterizing the latter. To this end, three parameters are

considered crucial to know: First, the size of the network which is the number of people who belong to the home network. Then, the density of the network of relationships which expresses the ratio between the number of links between its members taken in pairs and the total number of potential links if all network elements are interlinked [29]. Finally, the diversity which reflects the heterogeneity of the members of the network. This notion is with a variable geometry, since we can remember absolutely any heterogeneity criterion: the differences between network members may be age, sex, nationality, career, social status etc... Our main objective throughout our research is to validate the following central hypothesis:

H.1: The structure of the relational network of the contractor positively and significantly affects his access to external resources.

The Network Size and the Access to Resources

Most studies agree on the positive impact of the size of personal network on the access to resources. But given that the measures of personal network are different, network of discussion [30] or "active" network [31] M41, the results about the average size of the network, diverge.

Thus, Aldrich, et al. [30] found an average of 17 contacts. For Hansen [31], a network consists of 2-19 members. Furthermore, the study of Aldrich [30] was, thereafter, duplicated in different countries and give different results. So it seems that network size is very heterogeneous. The research of Greve and Salaff [32] is original since, unlike other studies, network size is the dependent variable in their study and the independent variables are the step in the creative process. Thus, they show that while the idea matures, the network is small (on average, 8 contacts), it becomes maximum (average 14.7 contacts) during the project preparation phase and then, decreases during the boot of the business (on average, 12 contacts).

The impact of the proportion of strong and weak ties in the relational network on entrepreneurial success is undoubtedly one of the most debated topics in the course of the "embedded" entrepreneur. If Granovetter's theory [1] on the strength of weak ties is very applicable to the case of job search, it has been less empirically verified in the context of creating of a business. Indeed, the entrepreneurial situation implies access to kinds of resources which are different from those necessary for job search, including resources that can be more risky to alter.

Network size is the number of different people related to a contractor during the creation process. If we assume that the objective of directed information research is difficult and that chance is critical in obtaining information (March to March 1978), many network people increases the chances of receiving of useful information. Therefore, the size of the network can be one of the most important variables to explain the successful establishment of new businesses. Connected to the size, but also independent from the

size, is the time that people spend to develop and maintain a network of contacts. With a large network, the time for each person can be smaller, with a small network, a person can use more time with each person. Luckily, there may be a better chance of picking up useful information by passing a small amount of time with a higher number of people.

Neegaard and Madsen [33], Shaw [34], Shaw and Conway [35], Singh [36] and Burt [2] found that large networks with a high number of contacts are important enough to develop entrepreneurial project as enable them to access resources held by the other players of network (2007). Baron highlighted that over the contractor's network is wide, the better is the access to information resources, including those relating to the recognition of opportunities. In light of the above ideas we will try to validate the axial following hypothesis:

H.1.1: *Access to external resources is even greater if it is supported by an extensive and broad network of relationships.*

Network Density and Access to Resources

The criterion of density is often associated with a rapid flow of information [37-39]. The personal network of maximum density, when it is composed of people who know each other, and minimum density, if the contractor is the only member of the network each of which has relations.

A low density network means that the contacts (alters) of the focal person (ego) in the network do not know very well, and therefore the likelihood of redundant information is lower. Redundancy is also a function of the degree of homogeneity of the people of the network in terms of training and work experience. This idea refers to the importance of technological congruence between the source and destination knowledge [40]. Another problem is their willingness to share information. This later is rarely a problem in high-density network, which can be a clique. An advantage with low-density networks is that each alter ego can connect to other groups that are usually not connected to each other. These links are called bridge altars which can connect two subgroups [41].

In high-density networks contacts with his primary contacts (alters) tend to be people who are already connected. Low density networks can provide access to many people by bridges and less redundant information [42,43]. Centrally located in a local cluster, means that information is available through many direct contacts. This means that the more Alters are connected to each other, more contacts are redundant and the network is denser. Chollet [3] presented density as the ratio between the numbers of links between members of the network took two to two and the total number of potential links, if all members of the network were related. Reagans and McEvily [44] have previously shown that the more a bond is characterized by a dense relational environment, more is the transfer of knowledge between it and those of its environment is easy.

Uzzi [45] and Ahuja [46] also suggested that two people with a dense network data are generally encouraged to cooperate because they are both related to other individuals who could take sanctions against opportunistic behavior. However, Burt [2] put in perspective that the density of a network increases its closure and thus, promotes the likelihood that its contacts share and know the same information, and therefore, redundant information. So we can formulate this hypothesis:

H.1.2: The greater the density of the personal network of entrepreneurs, the greater access to external resources.

The Number of Structural Holes and Access to Resources

For Burt [2] what is important for an actor, it is the number of non-redundant contacts which is held. Reflection incurred puts into perspective the concept of structural hole which is a central concept in the design of social capital and designates a void or absence of relations between two non-redundant contacts. Burt also points out that if the social structure of an actor is rich in structural holes, it can interpose intermediate between non-redundant contacts so as to become a bridge or forced passage point between each duality contact. Burt [2] highlights that network rich of structural holes allows the entrepreneur to have an easier, faster and better control of information.

In 2005, Burt says that structural holes have three kinds of benefits: A faster access to information, a better information (the information is not redundant to each side of the hole), more control over the dissemination of information.

For their side, Bhagavatula [47] have shown that companies operating in a volatile environment, richer in opportunities, benefit more number of structural holes, enhancing its ability to acquire more resources. We therefore propose the following hypothesis:

H.1.3: Access to external resources is even greater than the number of structural holes in social capital is higher.

Nature of Social Relationships and Access to Resources

Any individual who has a social network has many direct links with other people in this network. The impact of the proportion of strong ties and weak ties in the personal network on entrepreneurial success is undoubtedly one of the most debated topics in the course of the "embedded" entrepreneur. However, the results are very divergent. Several methodological explanations may in part explain this lack of consensus. First, the strength of the link is not measured in the same way according to the authors. Then, some were interested in the effects of the proportion weak links/strong links while others have questioned whether the intensity of a link imply specific dyadic relationships. These links can be, according to the categorization made by Granovetter [1,43] of strong ties or weak ties.

Unlike weak ties, strong ties are associated with the ability to inspire confidence. They refer to a network rich of shared emotions and confidences exchange. The benefit of strong relationships is that they are social and moral support whose contractor often needs in difficult times by providing reliable, valid and valuable information. In fact, the emotional ownership of a strong link to the contractor gives a more complete understanding of the behavior of his contact and reassurance about the credibility and trustworthiness of the information which it provides. We can then provide that information from people that the ego is connected by strong ties, are reliable as they are from people worthy of loyalty characterized by high levels of interpersonal trust, affection and attachment and are generally made with "intimate" knowledge that the individual can count (spouse, parents, close friends...) and what he spends a lot of time because they are emotionally close to him.

Thus, these strong ties characterized intimate knowledge of the individual that according to Krackhardt [48] consists of two components: the frequency and the duration which sets a "lived relational" "increasing the knowledge of a party by the other.

Granovetter [1] with his study of the weak and strong ties and their impact on job searching, found that the information circulated via weak ties are cool and not redundant. In the same line of ideas, Plocinicczak [49] adds that "weak ties allow more than strong ties to go out from the relational context in which the actor is inserted and provide access to unpublished contacts. A weak link is a gateway, if operative, to escape from a closed social system and obtain a renewed information."

More the contractor is supported by a large number of weak links, the more he will have the chance to have access to fresh and non-redundant information on international partnership opportunities. Therefore, openness to other individuals, other social groups through weak ties, allows access to more original and less redundant information.

Some researchers have argued for a closed network rich of strong ties as Aldrich [50], Hansen [51], McEvily [44], Inkpen and Tsang [52]. From their point of view, these strong ties draining benefits in terms of tacit knowledge transfer [45], exchange specific information [53] and reliable funding [54,55]. Differently to Granovetter [1], Burt [2] showed that weak ties building bridges between different media, allow individuals to take advantage of many opportunities available to them and promote social cohesion and access to different circles of information. These are the weak links, sparse, existing between distinct social groups that provide more access to information and separate resources [26]. Based on the fact that we have conflicting results on the effectiveness (or not) of strong ties or weak ties with respect to access to resources, several subsequent studies have attempted to reconcile these opposing views stressing that a mix of strong and weak ties would be better to achieve the objectives of any business, showing that it cannot be confined to a single class of bonds at the expense of another [56-58]. Based on this ideas, we could advance the following hypothesis:

H.2: More ties are strong, more access to resources is important.

Quality of Social Relationships: Role of the Diversity of Attributes of Alters in Access to Resources

Lin [59] in his theory of social resources, advance that one might call "good network" as the network is able to bring together alters with significant resources and is the product of their higher status, their high levels of prestige, and their demographic, organizational, professional, technical attributes. The wealth of the social network is also dependent on the socio-economic characteristics (prestige, wealth, social status ...) of actors that comprise it [55].

To this end, the contractor is required to identify relationships to focus on and avoid those time-consuming. This diversity suggested by Lin [59] being with a variable geometry, it refers to the heterogeneity of members on several criteria such as age, sex, nationality, career...

Julien [60] also reported that a network composed of members almost alike or have the same ideas is not rich because it typically generates redundant ideas and so, few new ideas.

Anyway, a good network should include heterogeneous members, bringing different ideas. However, the heterogeneity without depth, that is to say, without quite frequent exchanges prevents a better understanding between members and thus maladaptive responses to stakeholders [10]. The quality is measured by the ability of members of a network to provide rich information, that is to say, new, decoded and adapted information [61]. More diversity is high [29], more information is concerning expertise in the field rather than peer (Rueff [62] and more information is coming from more than one channel [63], and the entrepreneurial team is able to absorb this information [64].

The study of the diversity of the network is based on the social resource theory of Lin [65]. For Lin [65] a social network is useful when resources held by alters are useful for ego. This issue of the impact of network diversity refers to the theory of homosexuality [19]. Homophilia is the tendency to interact more with people who are like us, same age, same race, same level of training, etc... This tendency toward homosexuality has positive effects: it facilitates the transmission of tacit knowledge, simplifies the coordination and avoids potential conflicts.

But on the other hand, limiting the communication with different people, leads to a uniform method of thinking and can maintain inequalities. As a part of a business, the diversity of alters was measured by different variables: gender, age, ethnicity, function, job, etc. [66]. Others approach it in terms of the industry in which alter belongs to Butler and Hansen [67]. Based on these ideas, our additional hypothesis is formulated as follow:

H.3: The greater the diversity of the relational network, the greater the access to external resources

RESULTS AND DISCUSSION

It should be recalled that in our study we have established the choice of analytical methods according to the reference sample. We used the nonparametric and simple regression. Indeed, the sample divided into two groups of samples results in a decrease in the number of observation of individuals. Given this, it is necessary to mobilize adequate statistical tests (parametric tests/nonparametric tests).

This research is based on two components. The first, it is to check the change in the model variables for the two age categories (less than 40 years old and above 40 years). In this phase of the analysis, the sample will be divided into two groups (variable according to age). Nonparametric tests will be applied. The goal is to study the quality of cause and effect between the dependent variable and the explanatory variables contained in the research hypotheses. We will focus on testing hypotheses regarding the change of variable age of contractors.

To test the hypothesis concerning the variability of the components of the structure of the relational personal network for both age groups studied, we operationalized the Mann-Whitney Wilcoxon for two sample groups, divided according to the criterion age. The aim is to what extent the structure of a relational personal network changes from one age to another (below 40 years old/upper 40 years).

We constructed composite indicators on which we applied the tests of scores of ranks. Of course, the study of the conditions of application was the subject of a pre-analysis review. Table 1 specifies the characteristics of scales selected for the study of the structure of components of the personnel relational network.

Table 1: Characteristics of scales mobilized for the variable "Structure of the relational personal network".

Variables Features	Network functionality ****	Network size ****	Frequency of contact ****
Number of items*	4	3	2
Scope of the item	1-3	1-4	1-4
Scope of the scale **	4-12	3-12	2-8
Number of observations Age<40 years	10	10	10
Number of observations Age≥40 years	22	22	22

Sum scores Age<40 years	91	161	137
sum scores Age≥40 years	437	376	391
Average Age <40 years***	6.919	3.376	3.461
Average Age ≥40 years***	18.967	17.524	3.698

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

*****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

For the variable "Network Functionality" rank test by age group shows that the average score for the sample of mean age less than 40 years of age is 6.91, while that for the sample of the average age above 40 years is 18.96. We resumed the scores of condensed items after the results of the factor analysis.

The Mann-Whitney and Wilcoxon test is significant at the level of 1%, which confirms the hypothesis that the two groups of contractors from two different generations according to the criterion "Structure of relational and personal network". In addition, the Kruskal –Wallis test is significant at the level of 1% reflecting the generalization of the difference in the structure of relational network between the two categories of contractors.

The result of the Mann-Whitney and Wilcoxon test on equal scores obtained from the three items shows that the two age groups vary in terms of structure of relational and personal network .The probability of being wrong in rejecting the null hypothesis is less than 0.01%.

We conclude that both age groups have different significant judgments in the network size. The Kruskal-Wallis test shows a chi-square value of 12.26 with probability p-value=0.008. In other words, the difference observed on the structure of relational and personal network between the two groups can be generalized to the two age categories with the risk of 0.001%.

Finally, the test of scores of ranks, by adding the two measurement items of contacts frequency, gives an average of 3461 for the age group of less than 40 years and 3698 for the other group. The result of the Kruskal-Wallis test is not significant. In fact, the probability of being wrong by rejecting the null hypothesis is 74% and as a result the two groups come from the same generation according to the contacts frequency (Table 2).

Table 2: Summary of results of non-parametric tests on the "structure of personal and relational network.

Variables Tests	Network functionality ****	Network size ****	Frequency of contact ****
Test of Wilcoxon (two groups of age)			
Statistics (S)	264	528	264
Normal approximation Z*	4.938	4.924	4.659
Pr≥Z(unilateral)	0.000	0.000	0.000
Chi-deux	9.051	12.26	1.296
DL	1	1	1
Pr≥Chi-deux	0.0026	0.0008	0.74

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

*****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

To check the variability of the personal ties in each age category, we mobilized a test on the scores of ranks. The result of the latter reveals a mean of score rank score of 0.73 for the age group of less than 40 years and 0.52 for the sample of contractors of more than 40 years. The difference in test between the two samples, considering the age variable is significant with a risk of 10% (p-value <0.0994).

The Kruskal-Wallis test is significant at the level of 10% (p-value <0.072), and thus, the difference between the group of age less than 40 years and that more than 40 years is generalizable for our sample. Using the same test on the variability of attributes of alters light of the items retained after factor analysis shows that there is no significant difference between attributes of alters between the two groups (with p-value <0.28) (Table 3).

Table 3: Summary of results of non-parametric tests: Nature of ties and attribute alters.

Variables Features	Nature of ties****	Attributes of alters****
Number of the items*	3	4
Scope of item	1-3	1-3
Scope of the scale**	3-9	4-12
Number of observations Age<40 years	10	10
Number of observations Age≥40 years	22	22
Sum scores Age<40 years	195	135

Sum scores Age \geq 40 years	333	393
Average Age < 40 years***	0.7308	2.35
Average Age \geq 40 years***	0.5256	2.053
Test of Wilcoxon (two group of age)		
Statistics (S) Normal approximation	264	264
Z*	2.525	4.977
Pr \geq Z(unilatéral)	0.0994	0.000
Test of Kruskal –Wallis		
Chi-deux	1.988	0.224
DL	1	1
Pr \geq Chi-deux	0.072	0.82

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

*****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

The verification of tests of hypothesis is based on explanatory methods, including simple regression. By referring to the linear fit, this method verifies the cause and effect relationships between the relational and personal network and the access to strategic resources. One of the conditions of application of the simple regression refers to the number of observations required. To this end, we relied on the entire sample.

In order to test the relationships of variables acting on the access to strategic resources, we used multiple regression tests that are of three levels: Dependence intensity between each component of the relational and personal network (network structure- nature of ties- attribute of alters) and access to strategic resources is calculated using the correlation coefficient, the significance of the relation and the quality of the fit of the model assessed through the coefficient R^2 , the test F of Fischer and finally residue examination to translate the model's accuracy.

It should be noted that the linear coefficient of determination R^2 is the main indicator of the quality of regression. In other words, it summarizes the ability of the regression line to represent all of the point cloud of the observed values. This assessment should be as high as possible. However, R^2 interpretation must take into account also the number of explanatory variables and observations integrated in the model. To this end, the adjusted R^2 provides a more realistic assessment of the results of the model (Table 4).

Table 4: Results of the multiple regression: Structure of the network- access to strategic resources.

	N.obs	RMSE	Parms	R ²	Value of F	p-value of F
Regression 1	32	0.43	4	54.04%	10.976	0.0001
Regression 2	32	1.078	4	38.67%	5.884	0.0030
Estimated parameter results						
			Access to resources (1)		Access to resources (2)	
Size of ties			0.48*** (0.000)		0.569** (0.013)	
Density of relational network			-0.371** (0.022)		-0.461ns (0.28)	
Structural holes			-.0027ns (0.649)		0.031** (0.045)	
Constant			3.902*** (0.000)		4.096*** (0.001)	

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

*****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

The first relationship we wanted to check, logically concerns the assumption about the possible influence of the structure of the relational network of the contractor on the access to strategic resources. The test of multiple regressions provided a significant result. Indeed, the F value is 10,976 with probability p-value=0.0001 for the first regression and 5.884 with probability p-value=0.003 for the second regression. This result allows any conclusions about the quality of the value between the two variables. At this stage, we conducted a verification of three main relationships between the network size, the frequency of contact and the network functionality.

To check the first relationship, that is to say, the effect of network size on the access to strategic resources, our results of estimates show a coefficient of 0.48 with p-value=0.000 for the relationship "network size-access to strategic resources" and a coefficient of 0.569 with p-value=0.013 for the relationship "network size - access to strategic resources". Thus, the hypothesis H.1.1 postulating that access to strategic resources depends on the size of the network is accepted.

However, concerning the role that can play the density of the relational network measured

by frequency of contacts on the access to strategic resources, our results show a non-significant coefficient ($p\text{-value}=0.28$) and therefore, the hypothesis H.1.2 is rejected.

It is the same for the test of the relationship between structural holes and access to strategic resources. The result shows a significant coefficient of 0.031 ($p\text{-value}=0.045$) and therefore, the acceptance of the hypothesis H.1.3 proposing that network functionality apprehended on the side of the gestures and the roles of contacts significantly influences the access to strategic resources.

In this sense, we can conclude that the hypothesis H1 of the relationship between relational and personal network structure and access to strategic resources is partially validated.

The second relationship we have studied is the influence of the nature of ties on the access to strategic resources (H.2). The analysis of the test of the first simple regression revealed a non-significant test ($F=0.01$ with $p\text{-value}=0.92$). In this sense, we performed an analysis based on the results provided by the non-parametric tests on changing the nature of links in the two groups of age. The test of regression is still not significant ($F=0.029$, $p\text{-value}=0.074$). By opposition, the test of the second regression indicates a value of $F = 3.13$ which is significant at the level of 10% (with $p\text{-value}=0.086$). The share of the variance returned is equal to 9.4%. Thus, we conclude a partial validation of the hypothesis H.2 (Table 5).

Table 5: Regression of the model: Nature of ties and access to strategic resources.

ANOVA								
	DF	Sum of squared	Mean square	R ²	R ² adjusted	Error	Value of F	p-value of F
Regression 1	1	0.633	0.373	2.9%	7.4%	11.22	0.01	0.92
Regression 2	1	1.27	1.71	9.4%	6.4%	45.22	3.13	0.086
Estimated parameter results								
			Access to resources (1)			Access to resources (2)		
Nature of ties			0.027ns (0.924)			1.027* (0.087)		
Constant			4.19*** (0.000)			4.43*** (0.001)		

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

In order to check the third relationship, that is to say, the effect of attributes of alters on the access to strategic resources we conducted a regression test between the two variables. The result of the latter indicates a null value of F with a probability of 96.9% (Table 6).

Table 6: Regression of the model: Attributes of alters and access to strategic resources.

ANOVA								
	DF	Sum of squared	Mean square	R ²	R ² adjusted	Error	Value of F	p-value of F
Regression 1	1	11.39	0.37	1.5%	5%	11.39	0.22	0.8005
Regression 2	1	1.81	1.14	0.5%	0.63%	52.81	0.08	0.925
Estimated parameter results								
			Access to resources (1)			Access to resources (2)		
Attributs des alters			-0.084ns (0.969)			0.179 (0.704)		
Constante			4.201*** (0.000)			4.63*** (0.000)		

*Number of items mobilized for the calculation of the scores;

**Extent of the item of the scores obtained by constructing synthetic indicators;

***Average of the sum of the scores for each group of the sample;

****Variable considered before the factor analysis;

*****Variable considered after the factor analysis i.e. by construction of synthetic indicators on the items with the highest contributions to the main factor axes.

In addition, the simple regression test is significant for either the first regression ($F=0.22$, $p\text{-value}=0.8$) or for the access to strategic resources ($F=0.08$, $p\text{-value}=0.92$). This result then allows us to conclude to the rejection of the hypothesis H.3.

CONCLUDING REMARKS

Our empirical analysis highlighted, although partially, the role attributed to the relational and personal network of the contractor in their access to resources. To this end, it should be noted particularly the dynamic role of the network density and the high number of structural hole in the determination of the extent of access to resources. Moreover, our empirical analysis emphasize that this structure of the relational network differ significantly between the category of executive under 40 and those over 40 years [68-70].

To this end, our estimation results show that the structure of relational network structure from the side of the size and functionality of network significantly affect access to resources. Regarding the nature of ties it partially affects the access to resources. However, the variable frequency of contact and diversity of attributes of alters not have a significant effect on access to resources.

REFERENCES

1. Granovetter M (1973) The Strength of Weak Ties. *American Journal of Sociology* 78: 1360-1380.
2. Burt RS (1992) Structural Holes: The Social Structure of Competition. Cambridge, MA: Harvard University Press.
3. Chollet B (2002) L'analyse des réseaux sociaux : quelles implications pour le champ de l'entrepreneuriat. 6ème Congrès International Francophone sur la PME, HEC Montréal, Actes sur CD-ROM.
4. Chollet B (2004) Théories et mesures du capital social dans la recherche en management. 17èmes journées nationales des IAE: Lyon, 13-14 septembre.
5. Granovetter M (1995) The Economic Sociology of Firms and Entrepreneurs. *The Economic Sociology of Immigration: Essays in Networks, Ethnicity and Entrepreneurship*, New York, Russel Sage Fondation pp: 128-165.
6. Granovetter M (1973) The strength of weak ties, *American Journal of Sociology* 78: 1360-1380.
7. Marsden PV, Campbell KE (1984) Measuring tie strength. *Social Forces* 63: 482-501.
8. Johannesson B (1986) Network strategies: management technology for entrepreneurship and change. *International Small Business Journal* 5: 19-30.
9. Jenssen JI, Koenig HF (2002) The effect of social networks on resource access and business start-ups. *European Planning Studies* 10: 1039-1046.
10. Degenne A, Forsé M (2004) *Les réseaux sociaux*. 2nd edition, Armand Colin, Paris.
11. Coleman JS (1988) Social capital in the creation of human capital. *American Journal of Sociology* 94: 95-120.
12. Podolny JM, Baron JN (1997) Resources and Relationships: Social Networks and Mobility in the Workplace. *American Sociological Review* 62: 673-693.

13. Lin N, Ensel WM, Vaughn JC (1981) Social resources and strength of ties: structural factors in occupational status attainment. *Am Sociol Rev* 46: 393-405.
14. Chollet B (2005) Le réseau personnel de l'ingénieur en RandD: le cas du secteur des micro et nanotechnologies. Thèse de doctorat en Sciences de Gestion: Université Pierre Mendes France.
15. Seibert S, Kraimer M, Liden R (2001) A Social theory of Career Success. *Academy of Management Journal* 44: 219-237.
16. Cross R, Cummings J (2004). Tie and network correlates of individual performance in knowledge intensive work. *Academy of Management Journal* 47: 928-937.
17. Rodan SA, Galunic DC (2004) More Than Network Structure: How Knowledge Heterogeneity Influences Managerial Performance and Innovativeness. *Strategic Management Journal* 25: 541-556.
18. Lin N, Vaughn JC, Ensel W (1981) Social resources and occupational status attainment. *Soc Forc* 59: 1163-81.
19. McPherson JM, Smith-Lovin L (1987) Homophily in voluntary organizations: status distance and the composition of face-to-face groups. *Am Sociol Rev* 52: 370-79.
20. George G (2005) Slack resources and the performance of privately held firms. *Academy of Management Journal* 48: 661-676.
21. Barney JB (1991) Firm resources and sustained competitive advantage. *Journal of Management* 17: 99-120.
22. Moore JF (1996) *The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems*. New York: HarperCollins.
23. Greene P, Brush C, Brown T (1997) Resources in small firms: an exploratory study. *Journal of Small Business Strategy* 8: 25-40.
24. Hite JM, Hite S, Jacob J, Rew J, Mugumu C, et al. (2006) Building bridges for ressource acquisition: Network relationship among head teachers in Ugandan private secondary schools. *International Journal of Educational Development* 26: 495-512.
25. Lallement M, Bevort A (2006) *Le capital social: performance, équité et réciprocité*. Éditions La découverte 320 p.
26. Mercklé P. (2004). *Sociologie des réseaux sociaux*, Ed. La Découverte (Paris).

27. Lazega E (1999) Réseaux sociaux et structures relationnelles. Que sais-je? Éditions PUF p: 127.
28. Dubini P, Aldrich H (1991) Personal and Extended Networks Are Central to the Entrepreneurial Process. *Journal of Business Venturing* 6: 305.
29. Aldrich H, Zimmer C (1986) Entrepreneurial through social networks in Sexton. The art and science of entrepreneurship, Cambridge MA, Ballinger Publishing pp: 91- 110.
30. Aldrich H, Rosen B, Woodward WJ (1987) The impact of social networks on business foundings and profit: an longitudinal study. *Frontiers of Entrepreneurship Research*, Babson College.
31. Hansen E (1995) Entrepreneurial networks and new organisation growth. *Entrepreneurship Theory and Practice* 19: 7-20.
32. Greve A, Salaff JW (2003) Social networks and entrepreneurship. *Entrep Th and P* 28: 1- 22.
33. Neegaard H, Madsen H (2004) Knowledge Intensive Entrepreneurship in a Social Capital Perspective. *Journal of Enterprising Culture* 12: 105-125.
34. Shaw E (1997) The Real Networks of Small Firms. *Small Firms: Entrepreneurship in the 1990's* pp: 195- 222.
35. Shaw E, Conway S (2000) Networking and the Small Firm. *Enterprise and Small Business*. Financial Times/Prentice Hall.
36. Singh RP, Hybels RC, Hills GE (2000) Examining the role of social network size and structural holes. *New England Journal of Entrepreneurship* 3: 47-59.
37. Aldrich H, Reese PR, Dubini P (1989) Women on the verge of a breakthrough: Networking among entrepreneurs in the United States and Italy. *Entrepreneurship and Regional Development* 1: 339-356.
38. Cromie S, Birley S (1992) Networking by female business owners in Northern Ireland.
39. 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* 11: 1-24.
40. Tarek BH, Sami A (2014) Effects of corporate economic intelligence on international competitiveness of Tunisian firms. *Knowledge Horizons-Economics* 6: 113-121.

41. Mintz B, Schwartz M (1985) The power structure of American business. The University of Chicago Press.
42. Granovetter M (1974) Getting a Job: A Study of Contacts and Careers. Chicago and London: University of Chicago Press.
43. Granovetter M (1982) The strength of weak ties :a network theory revisited. Social structure and network analysis pp: 105-130.
44. McEvily B, Perrone V, Zaheer A (2003) Trust as an organizing principle. *Organization Science* 14: 91-103.
45. Uzzi B (1997) Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness. *Administrative Science Quarterly* 42: 35-67.
46. Ahuja G (2000) Collaboration Networks, Structural Holes, and Innovation: A Longitudinal Study. *Administrative Science Quarterly* 45: 425-455.
47. Bhagavatula S, Elfring T, Van Tilburg A, Van De Bunt GG (2010) How Social and Human Capital Influence Opportunity Recognition and Resource Mobilization in India's Handloom Industry. *Journal of Business Venturing* 25: 245-260.
48. Krachhardt D (1992) The strength of strong ties: the importance of philos in organizations. Harvard Business School Press pp: 216-139.
49. Pliciniczak S (2001) La coordination des relations inter-organisationnelles: une approche dynamique en termes de réseaux, Colloque "L'organisation sociale de l'économie, l'encastrement social, culturel, politique de l'économie", Institut de sociologie, Université de Lille 1, 8 Juin 2001.
50. Aldrich HE, Kim PH (2007) Small worlds, infinite possibilities: how social networks affect entrepreneurial team formation and search. *Strategic Entrepreneurship Journal* 1: 147-165.
51. Hansen MT (1999) The search-transfer problems: the role of weak ties in sharing knowledge across organisational subunits. *Administration Science Quarterly* 44: 82-111.
52. Inkpen AC, Tsang EWK (2005) Social Capital, Networks, and Knowledge Transfer. *Academy of Management Review* 30: 146-165.
53. Starr JR, MacMillan IC (1990) Resource Cooptation via Social Contracting: Resource Acquisition Strategies for New Ventures. *Strategic Management Journal* 11: 97-102.

54. Jenssen JI, Greve A (2002) Does the degree of redundancy in social networks influence the success of business start-ups? *International Journal of Entrepreneurial Behaviour and Research* 8: 254-267.
55. Batjargal B, Liu M (2004) Entrepreneurs' access to private equity in China: the role of social capital. *Organ Sci* 15: 159-172.
56. Rowley T, Berens D, Krachardt D (2000) Redundant governance structures: An analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal* 21: 369-386.
57. Hite JM, Hesterly WS (2001) The evolution of firm networks: from emergence to early growth of the firm. *Strategic Management Journal* 22: 275-286.
58. Elfring T, Hulsink W (2003) Networks in entrepreneurship: the case of high-technology firms. *Small Business Economics* 21: 409-422.
59. Lin N (1999) Social networks and status attainment. *Annual Review of Sociology* 25: 467-487.
60. Julien PA, Vaghely I, Carrier C (2004) PME et contrôle de l'information : le rôle du 'troisième homme'. *Journal of Small Business and Entrepreneurship* 17: 333-348.
61. Weick K (1993) The collapse of sensemaking in organizations: the Mann Gulch disaster. *Administrative Science Quarterly* 38: 628-652.
62. Rueff J (2002) Strong ties, weak ties, and islands: Structural and cultural predictors of organizational innovation. *Industrial and Corporate Change* 11: 427-450.
63. Nonaka I (1994) A dynamic theory of organizational knowledge creation. *Organization Science* 5: 14-37.
64. Zahra SA, George G (2002) Absorptive capacity: A review, reconceptualization, and extension. *The Academy of Management review* 27: 185-204.
65. Lin N (1995) Les ressources sociales: une théorie du capital social. *Revue Française de Sociologie* 36: 685-704.
66. Minguet G, Moreau R (2006) La construction sociale des réseaux de soutien des entreprises émergentes. Colloque International: *Création d'entreprises et territoires*, Tamanrasset.
67. Butler JE, Hansen GS (1991) Network evolution, entrepreneurial success, and regional Development. *Entrepreneurship and Regional Development* 3: 1-16.

68. Burt RS (2000) *The Network Entrepreneur. The Social Science View*, Oxford University Press pp: 281-307.
69. Burt R (2005) *Brokerage and closure: An introduction to social capital*. Oxford and New York: Oxford University Press.
70. Burt RS (2000) *The network structure of social capital*. Chap in *Research in organizational behavior*, CT: JAI Press.