How entrepreneurs identify opportunities and access to external financing in Tunisian’s micro-enterprises?

Omri Anis* and Frikha Mohamed

Department of Economics, Faculty of Economics and Management of Sfax, University of Sfax, Street of airport, km 4.5, LP 1088, Sfax 3018, Tunisia.

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Micro-enterprises play an extremely important role in the development of any country, especially in developing countries. To understand entrepreneurs who operate in a low-technology industry and in a low financial resources, we rely on the network and human perspective on entrepreneurship. In this paper, we investigate how the social and human capital of entrepreneurs influences their ability to identify opportunities and access to external financing. In this paper, we extends prior research in two ways. First, by introducing the context of micro-enterprises which has been marginalized in the entrepreneurship research. Second, to our knowledge, there is a very small number of studies that have investigated theoretically and empirically the access to external financial capital especially at the level of small businesses. In this regard, we propose to measure the access to external financial capital by the access to bank financing, that is, in terms of the ease in obtaining a credit.

Key words: Entrepreneurial opportunity, external financing, micro-enterprises, human capital, social capital.

INTRODUCTION

The importance of small and micro-enterprises in developing countries has been supported by many researchers and practitioners (Van Dijk, 2000). The importance of this sector in the socio-economic development of economies with low and middle income has been the subject of several studies (Daniels and Mead, 1998; Mead and Liedholm, 1998). In developing economies, small enterprises, particularly micro-enterprises are the major sources of employment and income (Liedholm and Mead, 1998). In Tunisia, micro-enterprises employing 1 to 9 persons represent 90% of total businesses. They are usually independent units or family owned whose propose is to create jobs and income for creators.

This sector constitutes the main component of the Tunisian economic and of social system. For such enterprises, the resources available to the founders (human, social capital, etc) play a central role mainly in the access to external financial resources, in the identification of entrepreneurial opportunities and in the business growth and success. In recent years, studies carried out in the entrepreneurship field have focused generally on the process of identifying the opportunities and access to external financing (Acedo and Jones, 2007; Uzzi, 1997). Despite their importance, none of them really focuses on the sector of micro-enterprises.

Opportunity is a central concept within the entrepreneurship field, and there is now a critical mass of literature centered on this concept. Its identification constitutes an interesting step for any business creation (Gaglio and Katz, 2001). Historically, this line of research seeks to understand why some individuals identify business opportunities and others do not (Shane and Venkataraman, 2000). Beside the opportunities identification, access to external financing is very useful for the exploitation of these opportunities and for developing new products. Access to external finance is a key determinant of a firm’s ability to develop, operate, and expand. Therefore, to find funds for startup, for emergence or expansion is the main problem faced by many entrepreneurs.

Compared to large and medium sized companies that had important resources, micro-enterprises are particularly more fragile because their resources are very limited.

*Corresponding author. E-mail: omrianis.fsegs@gmail.com
Tel:+216 -97-914294.
Their main problem arises in obtaining the necessary financial resources for starting and ensuring growth and survival. Micro-enterprises are among those which suffer most from these funding problems. Indeed, micro-enterprises are individual units that invest personal capital and not, or not enough, access to the public market capital. Thus, they fail to finance their working capital needs because for banks such companies are risky partners and their future is uncertain. Therefore, the identification of opportunities and access to external finance are both critical problems that must be mastered by an entrepreneur. To reduce the intensity of these two problems, the entrepreneur may use his knowledge, experience and personal networks to identify the opportunities and access to financial capital (Alvarez and Busentiz, 2001). A number of studies have indicated that the knowledge generated by education and professional experience (Anderson and Miller, 2003), and social network (Burt, 2004; Obstfeld, 2005; Uzzi, 1999) are therefore essential to understand the difference in the possibility of identifying the entrepreneurial opportunities and in the mobilization of external financial resources.

In this paper, we extend prior research in two ways. First, by introducing the context of micro-enterprises which has been marginalized in the entrepreneurship research, especially in studies related to the start of such companies that represent the strength of development in developing countries. Second, to our knowledge, there is a very small number of studies that have investigated theoretically and empirically the access to external financial capital especially at the level of small businesses. In this regard, we propose to measure this variable by the access to bank financing, that is, in terms of the ease in obtaining a credit. At high level, this work contributes to providing a theoretical and empirical answer for the following question: what are the factors influencing the success of small business startup (opportunities to create or to buy a business and the necessary funding to exploit these opportunities)?

After the “introduction”, “theory and hypotheses” discuss the relationship between the human and social capital theory and the identification of the entrepreneurial opportunities and access to external financial resources. “Methodology “, data and sample and measures are explained. The research findings are presented in “results and analyses”. The “discussion and implications” discuss results and exposes some practical implications of the research results. “Conclusion” concludes and presents future research of the study.

THEORY AND HYPOTHESES

Here, we present the literature and hypotheses concerning the relationship between the human and social capital related-variables with the opportunities identification and the access to external financial resources.

Human capital and entrepreneurship

The human capital theory was initially developed to estimate the income distribution of employees on their investments in the human capital (Becker, 1964). Among its principal conclusions, the man keeps a real capital in the form of knowledge, experience, skill or intelligence. Thus, when he analyzes an opportunity in a work or training field, he reasons as an “investor”. In other words, he evaluates how this opportunity will make his investment profitable and develop his human capital.

Human capital develops on different occasions through the knowledge acquired within the family circle, both formal and informal education and training (education, training organized within the framework of the labor market, etc) workplace training and the knowledge accumulated during the professional life and finally, informal training (that is, on the job) everyday. Several researchers have applied this theory in the entrepreneurship field (Davidson and Honig, 2003; Florin et al., 2003; Rauch et al., 2005) and led to many studies that introduced human capital in their estimation models.

The entrepreneurship literature has a number of arguments on how the human capital should influence the success of the entrepreneurial process. First, human capital increases the ability of owners to realize the generic tasks of entrepreneurship to discover and exploit opportunities (Shane and Venkataraman, 2000). For example, prior knowledge increases the entrepreneurial alertness of owners and prepares them to identify specific opportunities that are not visible to others (Shane, 2000; Venkataraman, 1997). Then, human capital is positively related to the planning and strategy of the company, which in turn positively affects entrepreneurial success (Frese et al., 2007). Subsequently, knowledge is useful to acquire other utility resources such as financial and physical capital (Brush et al., 2008).

In addition, some empirical studies have shown that the human capital attributes of the entrepreneurs (for example, education level, training, experience, skills received through investments in education, on the job and other types of experiences) are positively related to opportunities identification and even to business success (Anderson and Miller, 2003; Davidson and Honig, 2003). Similarly, Bhagavatula et al. (2010) reported that human capital related variables has a direct and an indirect effect on the access to external financial resources and on the identification of entrepreneurial opportunities.

Human capital and opportunities identification

The identification of opportunities that initiate the entrepreneurial project is the key driver of business start-ups (Gaglio and Katz, 2001; Shane and Venkataraman, 2000). The opportunity identification is the ancestor of both personal and social wealth (Venkataraman, 1997), and a source of competitive advantage (Alvarez and
Busenitz, 2001). Although the effects of opportunities identification can have a broad impact on the society, it is an important question that requires a study at the individual level for its inherent dependence on the individual cognition (Shane and Venkataraman, 2000). Gaglione and Katz (2001) argued that understanding the process of identify opportunities is one of the main questions in the field of entrepreneurship. Similarly, Ardichvili et al. (2003) went further and suggested that the identification of opportunities is not only one of the first stages of entrepreneurial process, but it also constitutes the most interesting disposition among all those that led entrepreneurship to success. This awareness of the importance of opportunities in the entrepreneurship field has attracted numerous studies whose goals is to understand why some people identify opportunities and others do not.

During the past two decades, some researchers have studied such questions through motivation (Kuratko et al., 1997), creativity (Hills et al., 1997) and vigilance (Gaglione and Katz, 2001). Thus, some researchers have investigated empirically the relationship between opportunity and knowledge (Shane, 2000), opportunity and human capital (Ucbasaran et al., 2009; Dimov and Shepherd, 2005; Davidson and Honig, 2003), opportunity and learning (Dimov, 2007). Some others, such as Venkataraman (1997), suggested that the entrepreneurial process cannot be explained only from the moment where the experience and knowledge of the entrepreneur can initiate and develop an interesting business idea. Thus, Davidson and Honig (2003), Smith et al. (2009), Ucbasaran et al. (2009) and Unger et al. (2009) insist on the significant role of the two dimensions of human capital (education and prior experiences) in the process of identifying opportunities.

Education and training

The traditional research on the human capital theory focuses essentially on the workers’ human capital and its effect on earnings (Becker, 1980). The human capital attributes generally consist of education, training, experience and skills that increase the knowledge accumulation (Davidson and Honig, 2003; Sexton and Upton, 1985; Watson et al., 2003). Later, the theory has been applied to entrepreneurship and a substantial literature in the field indicates that the human capital of entrepreneurs is positively associated with new firms’ creation (Brüderl et al., 1992); with the identification and exploitation of entrepreneurial opportunities (Bhagavatula et al., 2010; Davidson and Honig, 2003; Shane, 2003) and with the employment growth (Rauch et al., 2005).

Education, in itself is an investment, since it guarantees the development. In addition, it has functions such as prepares the workforce according to the country’s needs (Rauch et al., 2005). Education is one of the most frequently examined components of the human capital. Formal education allows structuring modes of thinking and strengthens the cognitive capacities of the active and future entrepreneurs (Davidsson, 1995; Honig, 1996). It can also give access to certain social networks or serve as a positive signal for new entrepreneurs in their evaluation by resource suppliers (for example, venture capital). It can be an important source of skills, ability to solve problems, motivation, knowledge and confidence (Cooper et al., 1994; Davidson and Honig, 2003). It is also considered as the supplier of cognitive skills needed in order to adapt to the environmental changes (Hatch and Dyer, 2004). The accumulation of these skills allows individuals to adapt themselves to new opportunities, such as the risk taking, to the entrepreneurial act that may lead to the creation of a new activity with high added-value. Thus, highly educated entrepreneurs may be better to cope with complex problems. They can also take advantage of their knowledge and their social networks generated by the educational system to acquire the necessary resources and identify and exploit opportunities (Shane, 2003; Arenius and Declercq, 2005). Others, like Parker and Van Praag (2004), Van der sluis et al. (2004), suggest that the well educated entrepreneurs are more likely to identify and/or achieve the returns from these opportunities. Beside formal education, professional training programs enable the students to learn the business (job) and to develop companies-specific skills. Specialized lessons and training enables individuals to develop a critical thinking, communication, teamwork and other skills that are necessary for him as an entrepreneur (Kim et al., 2006).

Currently, there are few empirical studies directly concerning the link between entrepreneurial training, education level of an entrepreneur and his ability to identify and exploit opportunities. Davidson and Honig (2003), Ucbasaram et al. (2009) found that there is a positive relationship between education level, entrepreneurial training and the process of identifying opportunities. They also argue that new promoters and those who are failing to identify more opportunities can compensate their lack of experience and expertise by investing in their human capital, that is, they could invest in education and entrepreneurial training to develop their entrepreneurial and managerial capabilities. In the same direction, Arenius and Declercq (2005) also found a positive relationship between the education level and the ability of entrepreneurs to identify entrepreneurial opportunities.

Prior experience

Human capital is not only the result of education and training, but it also includes previous experience (Davidson and Honig, 2003). This experience contributes to the development of skills, abilities, needs and entrepreneurship ideas (Bird, 1989). They can help with the integration and new knowledge accumulation (Ucbasaram et al., 2009) and also enable individuals to
adapt to new situations (Davidson and Honig, 2003), to become more productive and creative (Scratchley and Hakstian, 2000) and therefore more likely to define and structure new solutions to existing problems (Harper, 1996; Shane, 2003) and to discover and exploit opportunities (Fuentes et al., 2010).

Prior professional experiences are an important criterion to discover opportunities because they facilitate for entrepreneurs the access to information on the market in which they operate. According to Venkataraman (1997), this information helps only some entrepreneurs to discover some opportunities related to the accumulated information from prior experiences. Without sufficient professional experiences, individuals may have difficulties in taking the first steps towards becoming an entrepreneur (Kim et al., 2006). Parker (2004) suggests that there are several forms of professional experience. In particular, we focus on two types of previous work experience: experience in the activity sector and managerial experience. Previous experience in the sector enables individuals to access various social networks concerning market information, financial capital and development of suppliers and customers relationships (Kim et al., 2006). Experiences was considered in previous studies as a variable related to the human capital of entrepreneur and a key factor in the achievement of business initiatives (Fuentes et al., 2010). These authors have shown, on a sample of 2793 entrepreneurs, that prior experience in the activity sector does not affect the number of identified and developed opportunities. Beside prior experiences in the sector, Cooper et al. (1994) find that prior managerial experience of entrepreneurs is positively related to the use of personal networks to obtain information necessary for the establishment of a new business. This has been verified by Kim et al. (2006) on a sample of 830 new firms, that is, there’s a positive and significant relationship between prior managerial experience and the possibilities of creating a new firm.

This discussion suggests that the human capital dimensions of entrepreneurs, such as the formal and informal education generating tacit knowledge and previous experience generating explicit knowledge, play a significant role in the opportunity identification. Our goal, in light of this discussion is to verify the importance of these dimensions on the identification of entrepreneurial opportunities at the level of entrepreneurs-managers of the Tunisian micro-enterprises. The hypothesis that we test in this regard is as follows:

**H₁**: There will be a positive relationship between human capital related-variables and the number of opportunities identified.

### Human capital and access to external financing

Beside its role in identifying opportunities, the human capital constitutes a central element in accessing external financial resources. Bhagavatula et al. (2010) shows, on a sample of 107 entrepreneurs, that the human capital (such as experience and skills) has a direct and indirect effect on the access to external financial resources. They measured the access to financial capital in terms of an average credit that an entrepreneur receives when he purchases the raw materials. They stated that entrepreneurs who have higher levels of experience can mobilize more external resources that are important to exploit the identified opportunities.

In addition to prior experience, we believe that formal and informal education facilitate the access to external financing because some banks and lending institutions accept financing the university graduates and those who have undergone a professional training. Our goal, in light of this discussion, is to test the influence of the human capital attributes (such as education level, entrepreneurial training, prior managerial experiences, prior experience in the activity sector) on the access to external financial resources at the level of entrepreneurs-managers of the Tunisian micro-enterprises. The hypothesis that we test in this regard is as follows:

**H₂**: There will be a positive relationship between human capital related-variables and the ability of entrepreneurs to access external financing.

### Social capital and entrepreneurship

The concept of social capital has recently drawn a considerable attention in theory and research, essentially by sociologists, economists and political scientists. The social capital theory seeks the ability of actors to take advantage of their social structure and networks (Portes, 1998). Again, the social capital is the resource base integrated in the social structure of an individual which is used to facilitate the interaction (Adler and Kwon, 2002; Hitt et al., 2002; Nahapiet and Ghoshal, 1998). It emerged as an important generic concept in various disciplines (e.g. rural development, political science, sociology, human resources, economics and marketing (Adler and Kwon, 2002; Durlauf, 2002).

The social capital guarantees to entrepreneur the moral support he needs, it offers him, on the one hand, models supposed to increase his startup chances, and allows him, on the other hand, to standup to the difficulties upon the firm consolidation (Adler and Kwon, 2002). Similarly, social capital refers to the sum of the potential resources incorporated in the relationships between individuals, communities, networks or societies (Nahpiet and Ghoshal, 1998). Social capital indicates, therefore, the relational resources that individuals can receive through their social networks (Burt, 1997). Thus, the use of social networks can give future promoter a complement or a supplement of resources to better manage his entrepreneurial project.

The social capital of an entrepreneur can be defined as
the added value that can be mobilized through his various social networks (that is, the links with suppliers, customers, competitors, government, family, friends etc.). These linkages can be accumulated before the firm creation (that is, during the prior work experience, schooling years, travel, etc.).

The entrepreneurship literature has a number of arguments on how social capital networks should influence the success of the entrepreneurial process. First, the social capital provides networks and links that facilitate the identification, collection and distribution of information by promoting the discovery and exploitation of opportunities (Bhagavatula et al., 2010; Birley, 1985). Then, Birley (1985) notes that informal ties (family and friends) play a more important role than formal ties (banks, accountants, etc.) when it comes to the access to available resources. Similarly, Elfring and Hulsink (2003) suggest that social networks can play an important role in mobilizing resources with lower costs.

**Social networks and opportunities identification**

The literature analysis concerning the concept of relational capital reveals mainly two dimensions to measure its added-value. The first dimension consists in measuring the social networks size in terms of the number of direct links maintained with certain categories of individual actors (Burt, 1992). The second consists in measuring the nature of these links. According to Granovetter (1973), these while may be weak (weak ties) or strong (strong ties). Strong ties are related to the intimate relationships or close relatives. On the other hand, weak ties are related to distant parents, ancient friends, etc (Lin, 1995).

Social networks are important resources for the entrepreneur as they allow him access to useful information and reduce barriers to entrepreneurship development such as the lack of knowledge, creativity and skills. Entrepreneurs can also benefit from advantages resulting from social networks (Anderson, 2008; Shane and Cable, 2002) that facilitate the identification of opportunities, the identification and the collection of resources (Uzzi, 1999). The size and strength of social networks are two major variables whose influence on the information flow was the subject of a great debate. The network size is important because any link with others represents an information channel to exploit. Those with larger networks will benefit from a greater access to information which allows them to benefit from new opportunities and new ideas (Burt, 2004; Obstfeld, 2005). The strength represents the frequency of communication or interaction and the emotional intensity or the relationship proximity (Hansen, 1999; Reagan and McEvily, 2003).

Hence, the hypotheses concerning the influence of the two main dimensions of the relational social capital (size and strength) on the opportunity identification are presented subsequently.

**Network size**

Some sociological investigations have shown that the larger the social networks of an individual on the labor market are, the more important his professional success will be (Granovetter, 1973; Duminique and Lin, 1986). In a similar way, entrepreneurs who have more extensive networks will benefit to more information that allows them to accumulate new opportunities and ideas (Burt, 2004; Butler and Hansen, 1991; Hill et al., 1997; Obstfeld, 2005). Also, Ardchvili et al. (2003) indicates that the success of the opportunity identification is associated with the existence of an extended social network which includes the following four elements: the inner circle of entrepreneur (all relationships of entrepreneurs are stable and long term and they are not partners in the company); the acting force (that is, persons recruited by entrepreneurs to give necessary resources for the opportunity); partnerships (that is, the member of management team); and a network of weak ties (that is, a network used to collect general information and which could lead to the identification of opportunities). Singh et al. (1999) have shown, on a survey of 303 entrepreneurs, that the network size has a positive influence on the ability of entrepreneurs to identify opportunities. While Bhagavatula et al. (2010) have shown, on a survey of 107 entrepreneurs, that the network size has no significant impact on the recognition of entrepreneurial opportunities.

**Networks strength**

According to the classical work of Granovetter (1973), we can distinguish between two types of links: Strong links (primary relational networks) and weak ties (secondary relational networks). Some studies have shown the link between the social network theory and the process of identifying entrepreneurial opportunities. Arenuis and De Clercq (2005) have shown that entrepreneurs who have contacts with weak ties, have identified a bigger number of opportunities than those who have strong ties. In the context of weak ties of small businessmen, friends or governments, entrepreneurs can identify new ideas or opportunities (Aldrich and Zimmer, 1986). Weak ties can be considered as bridges to new differentiated information (Granovetter, 1983; McEvily and Zaheer, 1999) that give entrepreneurs a better chance to recognize opportunities (Hill et al., 1997; Singh et al., 1999). The work of Singh et al. (1999) reached the same conclusions. The results of their study showed, on a survey of 256 entrepreneurs that those who have weak
ties have identified a higher number of opportunities and ideas than those who have strong ties.

This discussion suggests that the relational social capital of individuals is a determinant element in the process of identifying entrepreneurial opportunities. Our goal, through this discussion, is to verify the importance of the size and strength of networks on the opportunity identification at the level of entrepreneurs-managers of the Tunisian micro-enterprises. The hypothesis that we test in this regard is as follows:

H₃: There will be a positive relationship between the relational social capital related-variables and the number of opportunities identified.

**Social networks and access to external financing**

Social networks are important resources for entrepreneurs as they give them access to useful resources that enable them to reduce barriers when starting and developing a project. Beside identifying opportunities, social networks play an important role in facilitating access to external financing. Access to finance is generally reported as one of the main obstacles faced by entrepreneurs during their start-ups and during the firms’ growth and survival. Micro-enterprises are always among those which suffer the most from these funding problems. To resolve their funding problems, some entrepreneurs may use their personal networks (banks, responsible of credit institutions, friends, suppliers, family, etc) to identify the needed funds for their firm.

Some studies (Birley, 1985; Hulsink and Elfring, 2003) suggest that the larger the social networks of entrepreneurs are, the easier access to financing is. Uzzi (1997) showed, for example, that strong ties between the entrepreneur and the banker have positive effects on the conditions of obtaining a credit. In this same framework, Jenssen and Greve (2002) showed that interpersonal relationships between entrepreneurs and bankers facilitate access to financing. On the other hand, Bhagavatula et al. (2010) suggested that, in terms of resource dependence, an entrepreneur will succeed only when he has access to funding that he needs. These authors showed, on a sample of 107 entrepreneurs in the handloom sector, that strong ties are more important than weak ones in the access to resources for a long term credit. Birley (1985) found similar results, that is, informal ties (family and friends) play a more important role than formal ties (banks, accountants, etc) concerning the access to available funding.

Our goal, in light of this discussion, is to test the influence of the social capital attributes (size and strength of networks) on the access to external financial resources at the level of entrepreneurs-managers of Tunisian micro-enterprises. The hypothesis that we test in this regard is as follows:

H₄: There will be a positive relationship between the social capital related-variables and the ability of entrepreneurs to access external financing.

**Research framework**

Based on the preceding arguments, the conceptual framework for this study is presented in Figure 1.

**Research question**

How do the entrepreneurs-managers of Tunisian micro-enterprises identify entrepreneurial opportunities and
access to external financing?

METHODOLOGY

The data we used in this study are collected in Sfax region, a country located in the south of Tunisia and characterized by an entrepreneurial spirit. We have used both qualitative and quantitative methods to generate data. Such methods allow for researches in areas where little work has previously been done (Hong and Antoncic, 2003). For the research models, we tested by questionnaires, the variables related to the human and social capital of entrepreneurs, the number of opportunity identification and the access to external financing. Then, we tested the relationship between the attributes of human and social capital and the opportunity identification and the access to external financing at the level of 228 Tunisian micro-enterprises with an analysis of multiple linear regression. To use this regression technique, we verified the conditions of its utilization such as the model linearity, residuals normality and the absence of multicollinearity between the independent variables.

Data and sample

The survey was carried out at the end of 2010 and during 2011, and was based on the technique of semi-structured interview with some Tunisian entrepreneurs in the Sfax region. We used information obtained from qualitative research to develop a questionnaire. Quantitative data were collected using the questionnaire with questions concerning the identification of the human and social capital of entrepreneurs and details concerning the opportunity identification and access to external financing. To develop the questionnaire, we adopted an two-step approach. In the first stage (the pre-survey), the questionnaire was based on the available literature and includes a list of themes that are important for entrepreneurs in the micro-enterprise hand. Subsequently, a survey questionnaire was developed to verify the credibility of the advanced research hypotheses. In the investigation phase, the initial version of the questionnaire was pre-tested next to ten people concerning the subject and the research problem. This has led to the reformulation of ambiguous question and the elimination of the irrelevant ones in order to verify the research hypotheses. The final questionnaire was prepared after several changes made to the initial questionnaire.

The selected target population of 228 firms is based on the size (1 to 9 employees) and location (Sfax region). The selected micro-enterprises belong to different sectors of the economy. The study was carried out by distributing questionnaires to 523 micro-enterprises that are mainly financed by the Tunisian Solidarity Bank. They were completed and returned only by 228 micro-enterprises. The response rate is about 44% (Table 1).

Mesures

Econometric models

The object of our empirical investigation is to study the relationship of the human and social capital with the dependent variable: opportunity identification (Thornhill, 2006; Baumol, 2004; Cainelli et al., 2005; Hausman, 2005; Partanen et al., 2008; Frith et al., 2001) and secondly to study the relationship between these capitals and the second dependent variable: access to external financing. To test these interactions, we consider the following two general models (Models 1 and 2):

Opportunities identification
\[ \hat{y}_i = \beta_0 + \beta_1 \text{human capital}_i + \text{social capital}_i + \text{controls variables}_i + \epsilon_i \quad (1) \]

We estimate coefficients \( \beta_i \) using the following model:

Opportunities identification
\[ \hat{y}_i = \beta_0 + \beta_1 \text{education level}_i + \beta_2 \text{entrepreneurial training}_i + \beta_3 \text{prior managerial experiences}_i + \beta_4 \text{prior experiences in the sector}_i + \beta_5 \text{networks size}_i + \beta_6 \text{weak ties}_i + \beta_7 \text{strong ties}_i + \beta_8 \text{age}_i + \beta_9 \text{gender}_i + \epsilon_i. \]  

The second interaction concerning the relationship between the human and social capital of entrepreneur and the access to external financing is presented as follows:

Access to external financing
\[ \hat{y}_i = \beta_0 + \beta_1 \text{human capital}_i + \text{social capital}_i + \text{controls variables}_i + \epsilon_i \quad (2) \]

We estimate coefficients \( \beta_i \) using the following model:

Access to external financing
\[ \hat{y}_i = \beta_0 + \beta_1 \text{Education level}_i + \beta_2 \text{Entrepreneurial training}_i + \beta_3 \text{Prior managerial experiences}_i + \beta_4 \text{Prior experiences in activity sector}_i + \beta_5 \text{Networks size}_i + \beta_6 \text{Weak ties}_i + \beta_7 \text{Strong ties}_i + \beta_8 \text{Age}_i + \beta_9 \text{Gender}_i + \epsilon_i. \]

Where, \( \beta_i (i = 0 \ldots 9) \) are the coefficients and \( \epsilon_i \) is the standard residual term. In the following paragraphs, we discuss the variables of models (1) and (2) in detail.

Dependent variables

We examined two dependent variables: opportunity identification operationalized in terms of the number of opportunities identified by an entrepreneur and the access to external financing operationalized in terms of the ease in obtaining a credit.

Opportunity identification

Being consistent with the previous studies (Shepherd and DeTienne, 2005; Ucbasaran et al., 2009), opportunity identification was operationalized in terms of the number of opportunities identified. A conservative definition of business opportunities was selected. Respondents were presented with a statement asking them, how many opportunities for creating or purchasing a business

Table 1. Description of the sample, classified by sector.

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<tr>
<th>Sectors</th>
<th>Micro-entreprises</th>
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<td>Restoration</td>
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<td>Pastry</td>
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<td>Textile</td>
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<td>Handloom</td>
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<td>Commercial</td>
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<td>Shoe</td>
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<td>Construction</td>
<td>9</td>
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<td>Manufacturing</td>
<td>27</td>
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<td>Agricultural</td>
<td>7</td>
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<td>Printing</td>
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<td>Computer equipment</td>
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<td>Total</td>
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have you identified before creating your micro-enterprises. They were presented with seven opportunity identification outcomes (that is, 1, 2, 3, 4, 5, 6 to 10, or more than 10 opportunities). The seven opportunity identification outcomes were divided into three groups, and the number of respondents belonging to each group was more evenly distributed. Respondents who reported that they had identified one opportunity were allocated a score of ‘1’ (accounting for 72 (31.6%) respondents), and those who had identified two or three opportunities were allocated a score of ‘2’ (accounting for 46 (20.2%) respondents), whilst those who had identified more than three opportunities were allocated a score of ‘2’ (accounting for 110 (48.1%) respondents).

**Access to external financing**

Access to external financial resources is often described as one of the main obstacles that impede entrepreneurs. Finding the necessary money to startup is often the biggest challenge facing many entrepreneurs. In this study, we propose to measure the access to external financing by the access to bank financing, that is, in terms of the ease in obtaining credit. The question that was asked is: "how do you evaluate the ease in obtaining services from your bank: loans, overdraft facilities, etc". The answers vary, according to the Likert's scale 5 points, from 1 (very little easy) to 5 (very easy).

**Independent variables**

In this paper, seven independent variables (among which four are related to human capital: education level, entrepreneurial training, prior managerial experience and prior experience in the activity sector and three related to social capital: networks size, weak ties and strong ties) are measured against the dependent variables: opportunity identification and access to external financing.

**Education level**

Respondents were divided into five categories according to their education level: (1) those who are illiterate, (2) those who have a first cycle of basic education, (3) those with a second cycle of basic education (4) those with secondary education level, and (5) those with a university level. The answers vary (based on a five-point scale) from 1 (those who are illiterate) to 5 (very little easy).

**Entrepreneurial training**

At this variable, we wonder whether the entrepreneurial training is achieved or not. This variable takes the value 1 if the respondent was trained in entrepreneurship and 0 if not (Skuras et al., 2005).

**Prior managerial experience**

This variable takes the value 1 if the respondent has a prior managerial experience and 0 if not.

**Prior experience in activity sector**

Respondents are asked to indicate whether they have a prior experience in the activity sector or not. This dummy variable takes the value 1 if the respondent has a prior experience in the activity sector and 0 if not.

**Network size**

To measure this variable, we gave respondents a list of six categories of links. The respondent was asked to select the links that he had personally undertaken among these six categories. The network size of each entrepreneur is thus equal to the number of category links that he has selected.

**Strong and weak ties**

To measure these two variables, we asked the respondents to indicate the nature of relationship they had with each link they have selected. Several authors, such as Brüderl and Preisendorfer (1998), Lin (1995), have reported that ties with intimate friends, spouses and close parents are considered as strong ties, whereas those with distant parents and old friends are considered as weak ties. The nature of relationship of each entrepreneur is equal to the number of links for each type of relationship (strong or weak) divided by the number of the link categories that he has selected.

**Control variables**

Age and sex were used as control variables. Age was measured as a continuous variable (between 23 and 58). Gender is a dummy variable taking the value 1 if the respondent is female and 0 if male.

**ANALYSIS AND RESULTS**

Means and standard deviations for the dependent, independent and control variables are reported in Table 2. The correlation coefficients suggest that the reported regression models will not be seriously distorted by multicollinearity. It is clear that the average age of our respondents is 41 years and with secondary or higher education level. In addition, women and men are equally represented in our sample. This table also confirms that the average number of opportunities identified is 2.17, while the ease of access to external finance has an average of 3.33 on a scale from 1 to 5. In the case of the entrepreneurial training, 0 means that the respondent has not and 1 if he or she has. The average of this variable is 0.36. Thus, the average managerial experience and the experience in the activity sector are 0.58 and 0.59, respectively, where 0 represents that the respondent has no these experiences and 1 if he or she has. The average networks size, strong and weak ties are 4.08, 0.47 and 0.541, respectively. Thus, we not found relationship between the network size and the weak and strong ties.

Finally, opportunity identification correlates positively with the education level, prior managerial experiences, prior experience in the activity sector and with weak ties, while the other dependent variable, access to external financing, correlates positively with education level, entrepreneurial training, prior managerial experiences, prior experience in activity sector, network size, strong ties, and negatively with weak ties. Thus, opportunity identification and access to external financing are negatively correlated, which means that the better an entrepreneur
Table 2. Means, standard deviation and correlations of the variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>33.71</td>
<td>5.37</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>0.48</td>
<td>0.49</td>
<td>-0.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>4.06</td>
<td>1.05</td>
<td>-0.06</td>
<td>-0.16</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial training</td>
<td>0.36</td>
<td>0.48</td>
<td>-0.10</td>
<td>0.05</td>
<td>0.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managerial experience</td>
<td>0.58</td>
<td>0.49</td>
<td>-0.19</td>
<td>-0.20</td>
<td>-0.11</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience in sector</td>
<td>-0.59</td>
<td>0.49</td>
<td>-0.16</td>
<td>-0.19</td>
<td>-0.14</td>
<td>0.04</td>
<td>0.11</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network size</td>
<td>4.08</td>
<td>1.64</td>
<td>-0.47</td>
<td>0.16</td>
<td>0.59</td>
<td>0.05</td>
<td>0.63</td>
<td>0.54</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong ties</td>
<td>0.47</td>
<td>0.43</td>
<td>0.09</td>
<td>-0.09</td>
<td>-0.06</td>
<td>-0.10</td>
<td>-0.11</td>
<td>0.13</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak ties</td>
<td>0.54</td>
<td>0.30</td>
<td>-0.04</td>
<td>-0.10</td>
<td>0.07</td>
<td>0.04</td>
<td>0.14</td>
<td>0.10</td>
<td>-0.11</td>
<td>-0.12</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity identification</td>
<td>2.17</td>
<td>0.58</td>
<td>0.08</td>
<td>-0.06</td>
<td>0.67</td>
<td>0.07</td>
<td>0.60</td>
<td>0.74</td>
<td>0.03</td>
<td>0.07</td>
<td>0.71</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Access to external financing</td>
<td>3.33</td>
<td>1.44</td>
<td>-0.09</td>
<td>0.10</td>
<td>0.69</td>
<td>0.17</td>
<td>0.08</td>
<td>0.07</td>
<td>0.09</td>
<td>0.64</td>
<td>-0.03</td>
<td>0.62</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01.

is in identifying opportunities, the more difficult he will find it to access to external financing (and vice versa).

Table 3 contains the results of the regression analyses of two models (1 and 2). It contains the coefficients (β), t-student (T) and significance (Sig). Based on this table, the explanatory power of both models are acceptable (adjusted R² is respectively equal to 0.427 and 0.222, p < 0.001) and their global significance allows to reject the null hypothesis which states that the coefficients are all zero (F is respectively equal to 6.361 and 6.335, p < 0.001).

Hypotheses 1 and 3: opportunity identification

The results of the regression analyses regarding opportunity recognition are presented in model 1. The results of this model show that the relationship between the human and social capital related-variables and the number of opportunities identification (Hypotheses 1 and 3) is positively significant (except the variables entrepreneurial training, network size and strong ties). Regarding human capital related-variables, three variables from four are significant predictors (hypothesis 1). As expected, education level, prior managerial experience and prior experience in activity sector have a positive influence on number of opportunities identified (respectively, β = 0.44, p < 0.001, β = 0.25, p < 0.05 and β = 0.33, p < 0.001). This means that higher the education level, prior managerial experience and prior experience in the activity sector are, the bigger the number of opportunities identified by entrepreneur is. This confirms our first hypothesis. We will come back to this point in the discussion.

Beside the human capital related-variables, two of three variables have a positive influence on the number of identified opportunities (hypothesis 3). The variable network size and strong ties have no effect on the dependent variable. Thus, another variable, which is the weak ties, is statistically significant (β = 0.36, p < 0.001). This implies that the weaker the links are, the more important opportunities identified by entrepreneur are. This partly confirms hypothesis 3.

Hypotheses 2 and 4: access to external financing

The results of the regression analyses regarding the access to external financing are presented in model 1. The results of this model show that the relationship between human and social capital related-variables and the access to external financing (Hypotheses 2 and 4) is positively significant (except the variables entrepreneurial training, network size and weak ties). As found in model 1,
Table 3. Results of multiple linear regressions for the two models 1 and 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Opportunity identification (model 1)</th>
<th>Access to external financing (model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>T</td>
</tr>
<tr>
<td>Age</td>
<td>0.24</td>
<td>2.341</td>
</tr>
<tr>
<td>Gender (f=1)</td>
<td>-0.05</td>
<td>-0.615</td>
</tr>
<tr>
<td>Education level</td>
<td>0.44</td>
<td>4.772</td>
</tr>
<tr>
<td>Entrepreneurial training</td>
<td>0.09</td>
<td>0.926</td>
</tr>
<tr>
<td>Managerial experience</td>
<td>0.25</td>
<td>2.457</td>
</tr>
<tr>
<td>Experience in activity sector</td>
<td>0.33</td>
<td>7.971</td>
</tr>
<tr>
<td>Networks size</td>
<td>0.02</td>
<td>0.234</td>
</tr>
<tr>
<td>Strong ties</td>
<td>0.16</td>
<td>1.668</td>
</tr>
<tr>
<td>Weak ties</td>
<td>0.36</td>
<td>3.615</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.427</td>
<td></td>
</tr>
<tr>
<td>Adj. ( R^2 )</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>( F )</td>
<td>6.361***</td>
<td>Sig. (0.000)</td>
</tr>
<tr>
<td>( N )</td>
<td>228</td>
<td></td>
</tr>
</tbody>
</table>

* \( p < 0.05; ** p < 0.01; ***p < 0.001 \); sample size.

three from four human capital related-variables are statistically significant (hypothesis 2). As expected, education level, prior managerial experience and prior experience in activity sector are positively related to the access to external financing (respectively, \( \beta = 0.52, p < 0.001 \), \( \beta = 0.36, p < 0.05 \) and \( \beta = 0.45, p < 0.001 \)). This implies that the higher the educational level, managerial experience and experience in the sector are, the easier the access to external financing is. These results partly confirm Hypothesis 1. We will come back to this point in the discussion.

Regarding the social capital related-variables, only the strong ties have a positive impact on access to external financing (\( \beta = .45, \ p <.001 \)). This means that the higher the number of strong ties is, the easier the access to external financing by entrepreneurs is. This partly confirms Hypothesis 4. Variables of network size and weak ties have no effect on the access to external financing.

DISCUSSION AND IMPLICATIONS

Our analysis is based on four hypotheses which show the importance of human and social capital related-variables of entrepreneurs on the opportunity identification and access to external financing. Below, these results are put in context with the existing literature to illustrate what they mean for researchers and practitioners.

Human capital during opportunities identification and access to external financing

The survey study of Bhagavatula et al. (2010) shows that the work experience and skills of entrepreneurs are strongly linked to their ability to identify the entrepreneurial opportunities and mobilize the financial resources. Access to external resources is operationalized in terms of the average credit period that an entrepreneur receives when he purchases the raw materials, and suggests that an entrepreneur will be successful only when he is able to have access the funding he needs. As an extension of the work of Bhagavatula et al. (2010) our study shows that education level, prior managerial experience and prior experience in the activity sector positively affect the identification of entrepreneurial opportunities. When put in an other context of research, this study also shows that these human capital attributes may be more or less useful in the different parts of entrepreneurial process such as what was suggested by Davidson and Honig (2003).

Hypotheses 1 and 2 show that the human capital attributes of an individual are directly related to his ability to identify opportunities and to develop the financial resources. The human capital, such as, the education level, the prior managerial experience and the prior experience in the activity sector which bring the entrepreneur knowledge and especially information that other entrepreneurs inevitably do not (Venkataraman, 1997), has a positive effect on the identification of opportunities and the acquisition of external resources. Thus, we found that entrepreneurs with higher levels of experience, easy access to external resources. However, this experience has a weak effect on the opportunity identification.

The third variable of human capital that has a positive effect on the two dependent variables is the education level. We found that the higher the education level of entrepreneurs is, more important the number of opportunities identified is. This confirms the results found by Davidson and Honig (2003) and Ucbasaram et al.
(2009). As we have found, the higher the education level of an entrepreneur is, the easier the access to financial capital is. Naturally, given the situation of the Tunisian micro-enterprises whose founders have a low education level, the education facilitates access to external financing because some banks and credit institutions accept financing only university graduates and those who have undergone vocational training.

Generally, the results of this study show that the human capital, represented by education level, prior managerial experience and prior experience in the activity sector, plays a determinant role in the process of identifying opportunities and access to external financing. Despite the sensitive role played by the human and social capital also has things to say in this process.

Social capital during the opportunity identification and access to external financing

Concerning the social networks of entrepreneurs, the entrepreneurship literature has always insisted on the importance of support of friends and family members in the development of a business (Johannisson, 2000). However, this study considers one type of relationship that has got less attention, the one established with senior officials and directors of banks, senior officials in public institutions, other entrepreneurs, etc. Specifically, we examined the social network size and strength measured with strong and weak ties. By extension of the work of Bhagatula et al. (2010) our study also shows that the network strength is positively related to the identification of entrepreneurial opportunities and access to external financial capital.

Hypotheses 3 and 4 show that the social capital, such as strong and weak ties, has a positive effect on the opportunity identification and access to external resources. Thus, we found that the variable of network size has no effect on both dependent variables. This confirms the results found by Bhagatula et al. (2010) and contradicts which was found by Archevili et al. (2003), Birley (1985), Burt (2004), Butler and Hansen (1991), Elfring and Hulsink (2003), Hill et al. (1997), Obstfeld (2005). We found that network strength has contradictory effects on both dependent variables. For example, the higher the number of the strong ties is, the easier the access to external financing by entrepreneurs is. Inversely, the more important the weak ties of entrepreneurs is, the bigger the number of opportunities is identified and the more difficult access to banking services is.

Our results can be generalized to all the micro-enterprises in Tunisia in which entrepreneurs require network used for the discovery of business opportunities and access to the necessary funding. At the same time, the owners-entrepreneurs of small businesses have the ability to create strong ties, whose characteristics are based on confidence, which play a central role in the acquisition of external resources and weak ties which play a role in the identification of the entrepreneurial opportunities.

In sum, this study helps to clarify the role that these factors play in identifying opportunities and access to external financing. The specific implications that emerged from our results contribute to the theoretical literature of entrepreneurship in various ways.

First, although, the considerable researches have focused on the role of the human and social capital related-variables on the opportunity identification, few of them were interested in the nature of experience and network. For example, Areuins and De Clercq (2005), Fuentes et al. (2010) analyze the importance of the nature of network and experience in the process of opportunity identification. They suggest that the weak ties, the prior managerial experiences and the prior experiences in the activity sector are positively related to the identification of entrepreneurial opportunities. Our results show that the more important the prior managerial experiences and prior experiences in the activity sector are, the higher the number of opportunities identified by entrepreneurs is. This result is contradictory with those who found that prior experience in the activity sector do not affect the number of opportunities identified and developed (Fuentes et al., 2010). It is compatible with that of Kim et al. (2006) who found that there’s a positive and significant relationship between prior managerial experience and the possibilities of creating a new firm. Our results also show that the weak ties are positively related to the identification of entrepreneurial opportunities and the strong ties have no effect. This is consistent with the work of Areuins and De Clercq (2005) which shows that those who have contacts with weak ties have identified a higher number of opportunities than the entrepreneurs having strong ties.

Second, although several studies are interested in analyzing the factors related to the opportunity identification, few researches have focused on the access to financing the exploitation of these opportunities, especially in micro-enterprises which are always among those which support the funding problem. Our results confirm later the importance of education level, prior managerial experiences and prior experience in activity sector on the access of external financial capital.

Concerning the variables related to the nature of social network, we found contradictory results to those obtained on the identification of opportunities. At this level, we found that strong ties are positively related to the access of external financing whereas weak ties have no effect.

Conclusion

The identification of opportunities and their financing are two central points of starting micro-enterprises. The
successful startup of this business passes by the accumulation of different types of internal and external resources.

The conducted research aims to study the factors affecting the identification of entrepreneurial opportunities and the access to external financing. The examination of the relative literature to this subject revealed the lack of research on this type of business, especially in Tunisia. The objective of this study is to empirically examine the relationship between various dimensions of human and social capital of entrepreneurs owners of Tunisian micro-enterprises and their ability to identify opportunities and access to external financing. Taking as starting point the number of opportunities identified by the entrepreneur, our results show that these opportunities are explained by the educational level and the prior experiences generating knowledge and also by the social relations with other entrepreneurs, customers, suppliers, administrators, etc. These factors are interesting not only in identifying opportunities, but also in researching external funding to exploit them.

To pursue this idea, we can continue to examine the effects of the human and social capital of entrepreneurs by adding to them the financial capital that they acceded on the growth and success of their micro-enterprises.

REFERENCES


