Published in Entrepreneurship & Regional Development, Vol. 29, no 1-2, pp. 174-196, 2017, which should be cited to refer to this work.
DOI : http://dx.doi.org/10.1080/08985626.2016.1255435

Indebtedness for young companies: effects on survival

Léopold DJOUTSA WAMBA [a], Lubica HIKKEROVA [b], Jean-Michel SAHUT [c], Eric BRAUNE [d]

[a] FSEG, University of Dschang, Cameroon; [b] IPAG Business School, Paris, France; [c] IDRAC Business School, Lyon, France & HEG Fribourg, HES-SO//University of Applied Sciences Western Switzerland; [d] INSEEC, Lyon, France

Abstract

Based on data from 7,350 Cameroonian companies created between 1990 and 2008, we study the link between the characteristics of indebtedness for young companies during their creation and survival period of up to three years, from three to five years, and beyond five years. We complement our quantitative analysis with semi-directive interviews of Cameroonian entrepreneurs to deepen our study. Our results are manifold. We show that access to bank loans during the creation phase, as well as the volume of loans or, to some extent, the debt ratio improve the probability of survival during the early years, but this effect fades away rapidly. The interviews shed light on the motivations of entrepreneurs, particularly of those with very small businesses. Finally, our work reveals the antecedent role of their social capital that facilitates their access to bank loans, and, therefore, the probability of company survival.

Keywords: *debt; bank loan; survival; start-up; rationing theory; capital structure; social capital*

Introduction

An increasing number of studies and reports show that, regardless of the country considered, new and young companies account for most net job and value creation (GEM 2014; Méndez-Picazo, Galindo-Martín, and Ribeiro-Soriano 2012). In Europe, around 80% of start-up companies survive after their first year, but this rate drops rapidly to 65% after three years, and to below 50% after five years (Eurostat 2014). Interestingly, Stangler and Kedrosky (2010) find very similar results for the U.S. However, the survival rate of such businesses in most developing countries appears to be lower (Calvino, Criscuolo, and Menon 2015). This prompts us to question the reasons for this gap. Survival studies on young companies located in emerging countries are limited. While Africa is often described as a continent whose economic growth is promising, it is very difficult to find studies on the survival rate of young African businesses. Moreover, factors explaining the influence of initial creation conditions of on the survival of these companies are not clear.

In literature, various works have focused on company survival and highlighted factors likely to encourage it (Boyer and Blazy 2014; Simón-Moya, Revuelto-Taboada, and Ribeiro-Soriano 2012), such as market factors, financial factors, factors related to life-cycle, personal characteristics of the entrepreneur, access to external financing, regional specificities, and social capital. Among these factors, we focus on external financing and, specifically, on financing through bank loans. Our choice is justified by two reasons. First, the lack of the company's own funds (contributions of the founders, parents, friends, and some professional investors during the creation of the company) encourages start-ups to resort to external financing. Second, and for numerous reasons, in most countries, bank debts, besides trade credit, are the sole financial means available for new firms seeking external finance (Berger and Udell 1998; Franks and Sussman 2005). However, companies in the launching phase have several characteristics that make their financing more problematic (Montoro-Sanchez and Ribeiro-Soriano 2011). First, their financing needs are very broad (i.e. to cover start-up costs, provide working capital, hire employees, and secure facilities or equipment). Second, cash flows associated with investments and their time horizons are particularly hard to define in the case of start-ups. Therefore, even if the banker grants a loan, financing amount and timing are two key elements likely to influence the survival of the start-up. Finally, small and medium enterprises' (SMEs) and particularly start-ups' financing remains one of the most under-researched areas in developing countries (Dalberg 2011).

Therefore, this study questions the influence of debt on the survival of new businesses in Cameroon. We first question the conditions of accessing bank loans. Subsequently, we test

the influence of the loan amount on the probability of survival. Finally, we highlight the impact of external financing timing on start-up survival. To the best of our knowledge this study is the first to portray the multi-dimensional influence of bank loan on start-ups' survival in a developing country. To achieve this goal, we first use the database of INS (Institute National de la Statistique) to perform a logistic regression on the data of 7,350 Cameroonian enterprises created between 1990 and 2008. Then, we complement our analysis with semi-directive interviews of 18 Cameroonian entrepreneurs between November 2014 and February 2015.

The remainder of this paper is organized into three parts. We first present the theoretical framework of the study, then the empirical research method, and, finally, the analysis of the main results achieved.

Theoretical framework and research hypotheses

This section first presents the theory that underlies the relationship between debt at the creation time of an enterprise and business survival, and subsequently synthesizes existing empirical results regarding the impact of debt on start-up survival to posit our research hypotheses.

Indebtedness constraints of nascent companies: an explanation starting with the rationing theory

The traditional capital structure theory contends that firms select the mix of debt and equity that maximizes their value and minimizes their weighted average capital cost. The assumption implicit in this theory is that firms have access to the full range of debt and equity alternatives, an assumption that does not typically hold for small, privately held firms. Moreover, high issuance costs make public debt and equity unrealistic options for smaller firms (Coleman 2002). Equity mobilized by the entrepreneur and his/her family is the main source of financing for a business start-up, but these funds are generally insufficient to maintain growth. The entrepreneur is thus forced to seek external capital to ensure the company's development (Demirguc-Kunt et al. 2006). Scherr, Sugrue, and Ward (1993) find that commercial banks are the major source of debt for small firms and start-ups. Similarly, Petersen and Rajan (1994) and Cole and Wolken (1995, 1996) find that commercial banks are the major providers of loans and other financial services to small businesses. However, given the strong risks inherent in creating companies, access to the credit market is often difficult. Small, privately held firms are plagued with the problem of asymmetric information or

incomplete flows of information between insiders and outsiders (Ennew and Binks 1994; Weinberg 1994; Zabri, Kamilah, and Lean 2014). Because of informational asymmetries, outsiders, including lenders and investors, have a difficult time securing and processing information about a firm, especially accounting data in Africa (Tchankam et al. 2016). Therefore, they may be less willing to extend capital to the firm.

According to Stiglitz and Weiss (1981), there are two sources of information asymmetry that limit debt financing of start-ups, characterized by poor information transparency, especially in developing countries (Liu and Yu 2008): the risk associated with the project to be financed and the risk of asset substitution. Added to these two sources of information asymmetry, the counterparty risk plays an important role when the inadequacy of guarantees offered by new entrepreneurs increases the risk of the counterparty to the bank. Moreover, given the lack of trust vis-à-vis debt recovery mechanisms in Africa, it is not surprising that banks remain highly liquid and prefer to invest in government bonds than lend to SMEs (IMF, 2016). Minimization of these different risks by bankers leads business start-ups to have low access to long-term credit financing, which could impact their ability to overcome cash flow difficulties, thus impacting their survival (Nicholas, Naresh, and Jukka 2014). For these reasons, short term credits are the type of credit facilities mostly used by SMEs in developing countries, such as Malaysia (54% of its SMEs) (Zabri, Kamilah, and Lean 2014).

Effect of debt on the survival of new businesses

Start-up financing is an emerging and interesting field for research in developing economies (Wu, Song, and Zeng 2008). Most of these firms are at a relative disadvantage, because they are too small to access public debt and equity markets. Similarly, they are typically too small to be identified by venture capitalists looking for the next initial public offering (Lantz and Sahut 2009). Very small firms are heavily reliant on bank loans, trade credit, and informal sources of capital, including credits from family and friends. Numerous studies highlight the existence of financial constraints that hinder the survival or growth of start-up companies (Dong and Men 2014; Robson et al. 2013).

In this study, we group earlier work based on the variables used to characterize debt. These variables are access to bank loan, the amount of bank loans, and the weight of debt in initial funding (i.e. financial structure). Another resource that enables entrepreneurs to raise funds is their social capital. Finally, we discuss social capital's impact on access to bank loans.

Access to bank loans during company creation and company survival

Prior research suggests that many small firms experience difficulties in working with banks, have less access to bank loans, and pay a higher interest rate for the loans they acquire (Coleman and Carsky 1996; Riding, Haines, and Thomas 1994). Small firms are often relatively new and lack a track record of profitability that would attest to their ability to repay a loan. Furthermore, many small businesses are in service industries and lack assets that could be used as collateral. Finally, small businesses are more prone to financial distress and failure (Bates and Nucci 1989; Cochran 1981). These factors make small business lending less attractive to banks. Despite their dependence on debt capital, particularly bank debt, one would anticipate that these difficulties would be even more pronounced for the smallest firms, which bankers may view as being overly labour intensive and insufficiently profitable, especially in developing countries, such as Sub-Saharan African ones (IMF, 2016).

Financial constraints are a major obstacle to SMEs' survival (Aghion, Fally, and Scarpetta 2007). Empirically, the influence of access to bank loan at creation on start-up survival is not a subject of consensus. In empirical studies, the effect is sometimes positive, sometimes negative, and sometimes inexistent (Briozzo, Vigier, and Martinez 2016). The results of Cooper and Gimeno-Gascon (1992), and Cooper, Gimeno-Gascon, and Woo (1994) highlight a positive impact of the access to bank loans at creation on company survival. They show that entrepreneurs who receive a bank loan are better equipped to survive than those who do not. On the other hand, Asterbro and Bernhardt (2003) find a negative correlation between having a bank loan and business survival. For Moati and Pouquet (1996), unequal access of enterprises to bank loans introduces an element of 'artificial selection' in the development dynamics of the industry. De Meza and Webb (1998) respond to Moati and Pouquet (1996), arguing that companies that start without any debt are those based on riskier projects, resulting in high mortality. This leads us to the following hypothesis:

Hypothesis 1: Access to bank loans at creation significantly influences the survival of a young company.

Amount of bank loans obtained at creation by a company and its survival

In literature, loans granted by banks to companies at the time of creation generally vary by industry and the trust of the banker in the chances of success (Robson et al. 2013). Nonetheless, a project that obtains significant bank loans does not necessarily have a better chance of survival. Highly indebted companies may be unable to obtain new investments

(Myers 1977). This debt overhang might force leveraged companies to pass on profitable growth opportunities, and even force them out of the market (Tchankam et al. 2016).

The literature also notes that certain industries, such as building, crafts, and transport, require more substantial investments and have better survival rates. Therefore, it is not necessarily the amount of funding itself that explains a better survival rate. Some authors highlight a curvilinear relationship between the amount of bank loans and company survival (Boyer and Blazy 2014). Therefore, a company easily accessing bank financing sees facilitated growth, but, above a certain threshold, debt leads to structural difficulties or simply forecloses future debt opportunities, which would be required to maintain growth. Weinstein and Yafeh (1998) suggest that banks push customers to borrow more than what is required for profit maximization. Banks also encourage firms to adopt strategies related to low risk and low returns on investment. Thus, firms can pay their debt on time, but firm managers in start-ups favour risky projects that induce a high probability of losing capital, and asset substitution is more difficult to detect for bankers in developing countries because of less stringent bookkeeping (Kumar and Rao 2016). Consequently, we deduce the following hypothesis:

Hypothesis 2: The amount of bank loans obtained by companies in the start-up phase has a significant curvilinear influence on their survival.

Financial structure of a young company and its survival

The survival of a company, its development, and its extension largely depend on its financial structure. The question of the financial structure of firms, understood as the distribution of financial liabilities and equity, has always aroused discussion and controversy.

First, Myers and Majluf (1984) indicate that companies primarily use equity to finance, and empirical work indicates that, no matter the country, business start-ups are self-financed up to 80%. Therefore, entrepreneurs prefer equity from their networks of relationships to formal borrowing from financial institutions. The entrepreneurs' own funds and the resources of family and friends are preferred sources of funding for this category of companies, especially in Sub-Saharan Africa (Gandja, Estay, and Tchankam 2015).

Second, according to the agency theory (Vos and Forlong 1996), the presence of a large volume of debt liabilities in a company may encourage entrepreneur shareholders to opt for high-risk investment projects that support the perspective of higher incomes. If successful, the entrepreneur shareholders retain the largest portion of revenues from the project, and if the project fails the bankers bear most of the cost. Of course, contractual arrangements guard bankers against this risk, and industries for which the risk asset substitution is the most important must have the

highest debt financing costs. It follows that start-up companies should have a particularly high cost of capital. According to free cash-flow theory (Akdal 2011), debt is reserved for firms with few opportunities for profitable investment, and young companies should present low debt ratios, especially for long-term debt in developing countries (Kumar and Rao 2016).

Third, according to Kaplan and Strömberg, (2004), the effort made by an entrepreneur is not observable, and entrepreneurs might be tempted to not maximize their efforts after they have received a loan (i.e. moral hazard exists). The capacity of a young entrepreneur is unknown prior to the receipt of a loan, which leads to a risk of adverse selection (Briozzo, Vigier, and Martinez 2016). Furthermore, an entrepreneur could pursue specific objectives that conflict with those of its funders. Finally, following Hart and Moore (1990), an entrepreneur may threaten to abandon a project, making the entrepreneur's knowledge critical to the lender's success.

Following the conclusions of this work, we suggest the following hypothesis:

Hypothesis 3: The weight of debt in the initial business start-up financing has a significant curvilinear influence on its survival.

The social capital of the entrepreneur and his/her access to bank loan

Economic behaviour, including entrepreneurial activity, hinges on a network of interpersonal relationships that form the basis of an individual's social capital (Coleman 1988). Uphoff (2000) distinguishes between two forms of social capital. The first, called structural social capital, refers to external social structures and the rules and procedures they embody. The second form, known as cognitive social capital, includes intangible elements, such as generally accepted attitudes and norms of behaviour, shared values, reciprocity, and trust. According to Lin, Ensel, and Vaughn (1981), social capital can be considered a resource tied to a relational network. Social networks are represented by family, the community, and organizational relations. The theory of social capital concerns the ability of actors to extract resources from their social networks. According to Putnam, Leonardi, and Nanetti (1993), social capital improves the efficiency of society by facilitating coordinated actions. From an entrepreneurial perspective, social capital refers to all interpersonal and inter-organisational relationships through which entrepreneurs have access to resources needed for the discovery and exploitation of business opportunities and the success of the enterprise (Davidsson and Honig 2003; Wiklund and Shepherd 2008). Prior literature reveals that the social capital of an entrepreneur can facilitate his access to bank loans in two ways (Jayawarna, Jones, and Macpherson 2011). First, pre-existing links with investors greatly increase the probability of

an entrepreneur obtaining financing. Fried and Hisrich (1994) show that, because investors receive many business plan applications for funding, social connections play a significant role in determining which companies will receive capital. These findings illustrate a process whereby investors tend to finance entrepreneurs they have heard about, either from owners of other companies in their existing portfolio or from their fellow investors, close friends, or family. Shane and Cable (2002) observe that direct and indirect links between entrepreneurs and investors impact the selection of projects to be financed. They also note that entrepreneurs with social capital (consisting of pre-existing direct or indirect links with venture capital investors) have a higher probability of receiving funding in the first stages of the business. As stated by DiMaggio and Louch (1998), and Kraus et al. (2016) bank-company ties are more critical to the lending market than classical theory suggests.

Second, the social capital of an entrepreneur might play a third-party role that guarantees a loan in a joint liability process. Uzzi (1999) argues that social embeddedness facilitates the transfer of private information between lenders and borrowers. According to Biggs and Shah (2006), membership in social networks is particularly important in developing and emerging countries. The operating environments in these countries are plagued by corruption and inefficient judicial systems. In this context, a social network puts peer pressure on its members who are, therefore, more prone to adopt good norms of behaviour. Bastelaer (2002) and Seibel (2000) suggest that social capital can replace collateral requirements because an entrepreneur's social network might guarantee loan reimbursement.

Finally, Ondoa, Douzounet, and Kouty's (2013) empirical study of 413 Cameroonian young SMEs shows that an entrepreneur's social capital significantly improves his/her chances of obtaining access to a bank loan, but the authors do not report a direct relation between the entrepreneur social capital and the survival probability of the business. This leads us to the following hypothesis:

Hypothesis 4: The entrepreneur's social capital significantly increases his/her access to a bank loan.

Methodology

This section describes the methodology of our empirical study on the relationship between company debt in the creation stage and survival. Our approach combines a quantitative and qualitative study, based on semi-structured interviews, to deepen the interpretation of our quantitative results. We first present our quantitative approach including the theoretical model of research, the operationalization of variables, and the sample.

Subsequently, we exhibit the methodology of our qualitative study, as well as the respondents' profile.

Quantitative approach

The purpose of this section is to construct an explanatory model between the variables describing the structure of indebtedness for business start-ups and their survival, and to operationalize the model variables. Our literature review reveals three components of loans that may affect the survival of newly created firms: access, volume, and share of overall funding. In this study, we analyse bank loans contracted by firms and not personally by entrepreneurs.

The meta-analysis of Westlund and Adam (2010), summarizing 15 years of empirical research concerning social capital, highlights the multi-dimensionality of this concept and the difficulties of operationalizing it. As stated by Westlund and Adam (2010), social capital research is still in its pilot phase, and many different and contradictory indicators have often been used as proxies for social capital. For instance, some authors (Dumez 2009) consider trust to be the best proxy, while others (Sabatini 2008) claim that trust is an epiphenomenon. Additionally, to test the effect of entrepreneur's social capital on bank loan access, we should collect data at the time of establishing the company, which is impossible with this type of methodology. Moreover, empirical studies that have investigated this phenomenon have small samples (e.g. 50 firms for Tchankam et al. 2016), against more than 7,000 firms in our case. For these reasons, we do not include this variable in our quantitative analysis.

The concept of survival is divided into three variables, depending on whether a company's survival is less than three years (PEREN1), from three to five years (PEREN2), or more than five years (PEREN3). Numerous authors (Dumez 2009) use this type of modelling. This distinction gives rise to three sub-models:

$$PEREN1 = \gamma_0 + \gamma_1 ACCRED + \gamma_2 VOLCRED + \gamma_3 CONDET + \gamma_4 PROPMANAG + \gamma_5 CA + \gamma_6 BRANACT + u \,, \quad (1.1)$$

$$PEREN2 = \gamma_0 + \gamma_1 ACCRED + \gamma_2 VOLCRED + \gamma_3 CONDET + \gamma_4 PROPMANAG + \gamma_5 CA + \gamma_6 BRANACT + u \,, \quad (1.2)$$

$$PEREN3 = \gamma_0 + \gamma_1 ACCRED + \gamma_2 VOLCRED + \gamma_3 CONDET + \gamma_4 PROPMANAG + \gamma_5 CA + \gamma_6 BRANACT + u \,, \quad (1.3)$$

PEREN1, PEREN2, and PEREN3 are binary variables and refer to the longevity of the company for various models. Their value is respectively 1 if the company survived less than three years in model 1.1, 1 if the company survived between three and five years in model 1.2, and 1 if the company survived beyond five years in model 1.3, and 0 otherwise. ***ACCRED*** is a dichotomous variable representing access to bank loans by a company at its inception. Its value is 1 if the company obtained a bank loan at its creation and 0 otherwise. ***VOLCRED*** is a multimodal variable indicating the volume of bank loans mobilized during the creation of the company. It is measured by the absolute amount of debt. It is set to 1 if this amount is below XOF 20 million, 2 if this amount is between XOF 20 and 100 million, and 3 if this amount is above XOF 100 million. ***CONDETTE*** refers to the level of indebtedness of the company at the time of its creation. The level of debt can have a disciplinary effect on the behaviour of the entrepreneur (Diamond 1991). To account for this effect of debt on survival, we use the ratio between the carrying amount of debt and total liabilities on the balance sheet. The result of this ratio is then transformed into a multimodal variable and takes the value 0 if the value of this ratio is 0, 1 if its value falls between 0 and 0.5, and 2 if its value is 0.5 or more.

According to the agency theory, two arguments justify the integration of managerial ownership in our model. First, Jensen and Meckling (1976) suggest that managers with small levels of ownership fail to maximize shareholder wealth because they have an incentive to consume perquisites. Rising managerial ownership helps resolve the moral hazard problem by aligning managerial interests with those of others investors. Second, Kaplan and Strömberg (2004) state that entrepreneurs might be tempted not to maximize their efforts once the loans are received (moral hazard). In this case, the financial losses encountered by the entrepreneur are proportional to the share of the company he/she owns. Therefore, managerial ownership is, all else being equal, a signal of the effort the entrepreneur is ready to make to reimburse the loan and ensure company survival. We define managerial ownership as a multimodal variable called **PROPMANAG**, which is measured by the share of capital held by the entrepreneur and his/her family at the time of creation, and is assigned a value of 1 if the share is less than 25%, 2 if it is 25–50%, 3 if it is 51–75%, and 4 if it is above 75%.

To account for company specificities, we consider two control variables commonly used for the analysis of results within the same market: firm size and sector.

CA is a metric variable and refers to the total sales of the company, being measured by the natural logarithm of sales for each company in the period 2013–2014.

Audretsch (1995) finds that the probability of survival for young companies is highly different between business sectors, and, in particular, longevity of firms is greater in sectors

that are less innovative. To control for this effect, we introduce the dummy variable ***BRANCHACT***, which takes the value 1 if the sector is low on innovation and 0 otherwise. To measure the relative importance of innovative activity in each sector, we define the total innovation rate as the total number of innovations recorded in 2014 divided by sector employment (Audretsch 1995). If the score of one sector is below the median, then the sector is qualified as less innovative.

The control variables PROPMANAG, CA, and BRANCHACT have the role of reducing marginal effects related to some debt variables. For example, access to finance and the amount awarded by the banker may be conditioned upon the capital share held by the entrepreneur and his/her family, the amount of the forecast sales of the company, and the industry, insofar as certain activities require more intangible assets to finance than others. Table 1 presents the synthesis of the variables taken into account in this study and their measurements.

This study focuses on all Cameroonian enterprises created between 1990 and 2008, listed by the INS. At the end of fiscal year 2014 (the first date in order to have the minimum period of six years for firms created in 2008), we have identified more than 15,300 companies in this category operating in different industries, with differing sizes and legal statuses. Given the requirements of our study, we have only retained private sector firms for which we have all the necessary information in the INS database, in particular the creation date and the financing structure at creation. Strictly applying these three conditions, we selected 7350 companies as our sample.

We first apply flat sorting for the descriptive analyses. For explanatory analyses, we used the Chi-square independence tests and logistic regression. Logistic regression allows us to explain a dependent variable of binary nature (PEREN), based on several other variables called explanatory variables. The advantage of this analysis is that it accounts for the interrelationships between all explanatory variables (Creswell and Plano Clark 2011).

Qualitative approach

We supplement the quantitative analysis with a qualitative research approach. This type of approach allows the researcher to understand how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences.

The choice of this methodology is also justified by its ability to generate comprehensive information to determine entrepreneur perceptions of the impact of bank loan at the early stage of a firm and the factors needed to access it.

In this context, extensive interviews were conducted between November 2014 and February 2015 with 18 entrepreneurs selected according to three criteria: survival (six people for each category defined in our quantitative analysis: PEREN1, PEREN2, and PEREN3), the amount of bank loans (we chose at least one firm per category that did not have recourse to bank loans during its creation), and firm size based on sales (two companies with sales below XOF 10 million, two having sales between XOF 10 and 100 million, and two with sales above XOF 100 million).

Each interview took place over a period of one hour on average. At the beginning of every interview, interviewees were given a guarantee of confidentiality regarding their identity and data provided. All interviews were recorded and reviewed several times before being transcribed in full. Four areas were addressed:

- the reason for the use or non-use of bank loans at the time of the creation of their companies;
- the bank loan procedure at the company creation time;
- relationships with a banker at the company creation time;
- the role of bank loans and their volume at the time of company creation and their impacts on firm survival.

To analyse the data, we applied best practices in qualitative research, such as those promoted by Miles and Huberman (1994). We followed the following four steps:

- Coding of the interviews: codes were assigned to units of meanings, which could be phrases, sentences, or even paragraphs. This step permitted us to identify emergent themes through the use of NVivo.
- Defining tabulation: we used a tabular display to facilitate the analysis of our qualitative data. We built a matrix using our codes to cluster information around topics.
- Comparison and identification of patterns: our matrix enabled us to identify patterns and contrast and compare between entrepreneurs' perceptions.
- Closing of the study and analysis. We reached theoretical saturation at around 14 interviews. To make sure we were not missing any key elements, we conducted additional interviews.

Results of the two approaches

Results of the descriptive analysis

The firms in the sample belong to 31 industries, and more than 60% of the companies are in the following sectors: wholesale and retail trade (25.4%), finance (9.7%), transport and communications (8.5%), building (8.3%), and business service (7.9%). Of these companies, 71% are located in the cities of Douala, Yaoundé, Bafoussam, Mbalmayo, and Limbé. This percentage is similar to the concentration of firms observed by the INS in these six cities (65% according to the 1999 report of the INS). Regarding human resources, 79.1% have a workforce of fewer than 50 employees, 8.3% between 50 and 100 people, and only 12.4% have more than 100 employees. Overall, 77.6% of the staff comprises employees, 15.2% technicians and foremen, 4.9% senior technicians, and 2.3% executives.

At their founding, 76% of them had mobilized initial capital of less than XOF 50 million, while 4% had capital ranging between XOF 50 and 100 million, and 20% had capital above XOF 100 million. The study of the geography of the initial capital shows that, on average, the share of capital held by the entrepreneur and his/her family during the creation of the company is around 63.3%. The involvement of business angels and venture capital companies is very low with 2.8% and 0.04%, respectively, but other investors represent 34.5%. This category includes friends and relationships of the entrepreneur. We could not establish precise statistics for all companies because friendship is difficult to identify. Our calculations regarding 100 companies, however, seem to indicate that friends' participation occurs in a minority of cases, representing fewer than 9% of investors within the latter category.

Descriptive analysis reveals that, at the creation of a company, the shareholder contributes more than 75% of the initial capital in 69.4% of cases, between 50% and 75% in 19.2% cases, and below 50% in 11.4% of cases. It also reveals that 38.1% of entrepreneurs had access to bank loans during the creation of their businesses, while 61.9% did not, either because they had not expressed the need or because they were denied loans.

Among those who obtained bank loans, 47.4% received between XOF 1 and 20 million, 33.1% between XOF 20 and 100 million, and only 19.5% above XOF 100 million. With regard to the burden of debt in the company's initial financing, we observed that 61.9% of companies did not have access to bank loans. As a result, their resources consisted only of equity (except for 0.5% of the firms that obtained loans from individuals). Conversely, the weight of debt for leveraged firms was below 0.5 in 27.8% of cases, and above 0.5 in 10.7% of cases. At the end of 2014, 61.7% of firms in the sample had sales below XOF 100 million

and 38.3% of or above XOF 100 million. If we use the categorization of companies depending on the volume of such sales advocated by the OHADA (Organisation for the Harmonisation of Business Law). accounting system, we notice a preponderance of SMEs (firms with sales below XOF 100 million) compared to large enterprises. According to this criterion, the results predict that the Cameroonian economy would be characterized by a predominance of family SMEs.

Performance indicators according to the criterion of equity profitability (i.e. when each company's performance is compared with quartiles of its industry) show that 31.8% of these companies are underperforming, 19.8% are weakly performing, 9.2% are moderately successful, and 39.1% are high-performing. According to the criterion of economic profitability, the trend is similar, with 31.6% underperforming, 44.7% weakly performing, 12.4% moderately successful, and 11.2% high-performing.

The probability of a company created between 1990 and 2008 being perennial is differentiated depending on its longevity. Finally, we note that the probability of a company created in this period being perennial after its fifth year is 34% on average. This survival rate is lower than for EU firms (around 50% according to Eurostat, 2014) and fully justifies our study, given the difficulties of financing Cameroonian start-ups with debt.

Bivariate analyses results

The purpose of this analysis is to examine, through Burt contingency tables, the frequency distribution of responses for two or more related variables (Hancock and Mueller 2010). In the present case, these variables are related to debt (access to bank loans, loan volume, and the weight of debt in the company's stable resources) and the longevity of the company (below three years, between three and five years, and above five years). To measure the intensity of the relationship between these variables, we use tests of statistical significance of association of the Chi-square ($\chi 2$) because it is the most suitable for testing the statistical significance of an association between two qualitative variables (nominal or ordinal). Table 2 presents the synthesis of the bivariate analysis results.

In this table, we see significant relationships between variables related to indebtedness of the company (access to bank loans and loan volume) and survival. Therefore, we can make three observations from the $\chi 2$ independence tests:

- First, it appears that the variable access to bank loans at the time of creation (ACCRED) has an influence on company survival. This influence is significant at the 1%

threshold if the longevity of the company is below five years. For survival above five years, the relationship is significant at the 5% threshold. This first result reinforces H1.

- Second, we notice that the variable volume of bank loans (VOLCRED) also has a significant influence on survival up to five years and becomes less significant beyond five years (10% threshold). This result supports H2.

- Finally, we observe that the relationship between the weight of debt in the company's initial financing (CONDETTE) and the survival of the company is significant at the 5% threshold. This supports H3.

The χ^2 association test allows us to measure the intensity of the relationship between two variables, but one should notice that the explanation power of this test is weak for two reasons. First, it does not indicate the direction of the relationship (positive or negative) and, second, it does not account for interactions between explanatory variables. To correct these failures, we use multivariate testing and, in this case, logistic regression.

Regression test results

To further the above results, we performed logistic regression to better understand the impact of debt at the time of creation on companies' survival. Our sample size allows us to use this type of modelling, which has the advantage of combining quantitative and qualitative variables. In fact, numerous researchers have shown that a minimum size of at least 50 observations by predictor is necessary for logistic regression (Hancock and Mueller 2010).

We start with a test of correlation to detect any problem of multicollinearity among variables. The result of the Pearson correlation tests shows that some explanatory variables are significantly correlated, but no severe problem of multicollinearity is detected because all correlation coefficients are below 0.6 (i.e. the threshold above which we start to see problems of multicollinearity among variables). Moreover, the low inflation factors of the variance (VIF < 2.5) associated with low standard deviations from estimates of parameters in the three regressions of our model (Table n°3) indicate an absence of collinearity.

The results of the estimation for these models reveal that the effects of financing structure during the creation of the company on its survival fade over time because the explanatory power of model PEREN3 is much lower than that of models PEREN2 and PEREN1, while the Chi-square statistic attests to the good specification of each model at the 1% threshold. We conclude, according to the R^2 of Nagelkerke, that the indebtedness of company start-ups explains the business survival rate of 30.4% when survival is below three years, 25.1% when it is between three and five years, and 11.4% when it is above five years.

We also note that our three explanatory variables are significant for all models; variables related to the indebtedness of the company at the time of its creation (access to bank loans, obtained loan volume, and the importance of debt in initial funding) have a more or less strong impact on company survival.

First, access to bank loans at creation time (ACCRED) has a significant and positive influence on company survival at the 1% threshold for PEREN1 and PEREN2, and at the 5% threshold for PEREN3. This result allows us to validate our first hypothesis, H1, which is consistent with those of Moati and Pouquet (1996), Teurlai (2004), and Boyer and Blazy (2014) in the French context, although Bastié et al. (2011) reject this link for specific loans with a subsidy. This is due mainly to the fact that any banker will, before issuing a loan, ask the creator for information, including at least business plans, and often other documents, such as a market study to justify the opportunities of the company's products or services. Numerous authors have shown that formalization of project creation is determinative in the survival of young companies (Boyer and Blazy 2014).

Second, we notice that the volume of loans obtained at creation time (VOLCRED) has a significant influence on the company's survival. The survival of the company, however, is not a linear function of the amount of loans obtained during the start-up phase. Having no loans during creation has a negative effect on survival. This is consistent with H1. Banks generally refuse loan to firms during creation because the risk they perceive is too great. The amount of bank loans obtained, up to a volume of XOF 100 million, improves survival. It is inferred that the higher the amount of loans raised, until a certain threshold, greater is the company's chance of survival. However, this relationship depends on the importance of financing. We note that certain activities, such as building or transport, require larger investments and record the highest survival rates. As such, it is not necessarily the amount of funding itself that explains the better probability of survival (Bastié and Cieply 2013).

Beyond XOF 100 million, the effect of increased loans is negative only for businesses that have existed for less than five years. We infer that, at this threshold, the debt is important enough to make companies more vulnerable to changes in economic conditions. This is explained by the fact that, at the start, company operations consume more resources than they produce. If the debt is massive, financial expenses are important, and the company can easily be in cessation of payment if its sales are insufficient. This increased risk for banks does not, however, mean that they face greater losses than for other loans, because risk depends on the guarantees that banks take into consideration. For instance, in the building sector, the underlying real property is used as a guarantee. H2, whereby the volume of loan obtained by

the companies in start-up phase has a significant curvilinear influence on their survival, is thus validated.

Finally, our last explanatory variable, the debt ratio, measures the weight of debt in the company's financial resources during the start-up phase (CONDETTE). If this ratio is zero, the firm launched debt-free and has a lower probability of survival than indebted companies. We show the results of H1. There is also a threshold effect for the volume of debt. For a ratio of debt between 0 and 0.5 (i.e. 'normal'), this indicator has a positive influence on the survival of the young company, but its effect fades over time (it is only significant at the 10% threshold for PEREN3, as opposed to the 1% threshold for PEREN1 and PEREN2). For a debt ratio above 0.5 (i.e. 'high'), the effect of debt on survival is negative. We conclude that the leveraging effect of debt is adding too much risk to the company and alters the continuity of its operations.

H3, whereby the share of debt in the overall company's funding during the start-up phase has a significant curvilinear influence on its survival, is thus validated. This relationship is positive, and then negative when the debt exceeds a certain threshold. This result is consistent with those observed in the French context. In particular, Lelarge, Straer, and Thesmar (2010) show that a certain financial independence explains the success of many SMEs. Numerous entrepreneurs, in a context where the banking system is considered rigid, assign great importance to the control of debt and prefer financing by equity or self-financing.

For the control variables, it is clear that the share of capital held by the entrepreneur and his family (PROPMANAG) during company creation has a significant and positive influence on the company's survival when this share exceeds 25%. This result suggests that the greater the capital share held by the entrepreneur and his family at creation, the more the company is likely to be perennial. This reflects the belief and commitment of the entrepreneur in the success of the project and facilitates financing by debt, both in terms of access to bank loans and loan amounts. This result is consistent with that of Bastié and Cieply (2013). The threshold effect identified in this case for survival up to three years (significant at the 5% threshold) when the share of capital owned by the entrepreneur and his family (PROPMANAG) at creation is below 25%, can be interpreted as distrust from bankers. Indeed, the fact that the entrepreneur invests low amounts in his project during the start-up phase is perceived as a negative signal indicating a high probability of the venture's failure. Finally, the sales (CA) and the innovation of the industry (BRANCHACT) appear to be positively significant control variables. The size and the low level of industry innovation permit firms to better resist change and have a higher longevity. Table 4 presents the synthesis

of hypotheses testing. According to this summary table of results, it appears that the set of hypotheses (H1, H2, and H3) formulated in the present study are validated. Overall, the survival of Cameroonian enterprises can be partly explained by external funding, especially debt. Additionally, the share of capital held by the entrepreneur and his/her family also plays a leading role in lending credibility to the project and accessing bank loans.

Qualitative approach results

The analysis of semi-structured interviews with entrepreneurs resulted in two categories of opinions regarding the use of and access to loans, depending on the size of the company created: very small businesses (VSBs) and other SMEs. This provides the following results that reinforce our quantitative analysis and provide additional explanatory items, as follows:

- A non-bank loan is, most of all, a choice of the entrepreneur. In the reasons given for non-bank loans, refusal of a request for loan by banks is discussed in la limited manner. Entrepreneurs note a type of self-censorship (i.e. they believe that bank loans are not adapted to their case or that their bank is going to deny them funding), a lack of borrowing need, or a refusal to go into debt. The entrepreneurs who say they voluntarily do not use bank financing because they do not have the need or desire to enter debt usually develop small projects with their personal funds. This censorship is much stronger for VSBs than other SMEs. These entrepreneurs acknowledge, however, that they often underestimated their financing needs and have had to make additional investments in the first six months of company creation. By investing the bulk of their savings, the company creators run out of 'reserves' to cope with unforeseen events.
- Entrepreneurs have divergent opinions on access to bank loans. On one hand, VSB entrepreneurs note that access to bank loans is difficult because banks require detailed information about a business plan, management of the future company, forecasts, and how the loan will be repaid, which they are not able to provide. They perceive a particular pressure from banks on their ability to pay debts in the short term. Banks also request information on project stakeholders mobilized within the social network, and whose reputation will shed light on the quality of the approach and the seriousness of the entrepreneur. On the other hand, larger-sized entrepreneurs believe that the requirements of banks to form their loan applications have helped them better financially structure their project. Particularly, they often had to amend provisional elements and improve financial projections in their business plans. The involvement and reputation of their accountants in this process also play an important role. These results are consistent with those of Bastié et al. (2011), in the French context. This

indicates the need for involvement of entrepreneurs in their firm financing. The disciplinary role of banks is also highlighted in Minnis and Sutherland (2016) and Diamond (1991). Access to bank loans also depends on the amount of capital raised initially by the entrepreneur and his/her family. This must reach a certain level to be credible, and has to make possible loan access.

- For VSB entrepreneurs, the rational maximization of profit is not their main concern. They seek to ensure the survival of their firms than achieve profitability, and have suboptimal behaviour towards partners with which they 'like' to work. The importance of the networks formed by these entrepreneurs is also reflected in the choice of bank for their loans. They remain loyal to their banks, and they do not seek the best offer by putting banks in competition.

- According to our analysis, the human dimension in the first two conversations between banker and entrepreneur, at the time of the request for loans for business creation, is an important element influencing the continuation of the relationship and the procedure for loan applications. Our discussions also mentioned the problem of trust in the relationship between the banker and the entrepreneur, except for serial entrepreneurs. As noted by the literature in this area, trust builds with the interactions between the players, but the paradox of the need for a minimum trust level to initiate the actors' interactions is almost never discussed (Jayawarna, Jones, and Macpherson 2011). This trust level is based on a minimum level of knowledge of the players. Entrepreneurs often find personal questions from bankers regarding their motivations to create, and their life, which are designed to glean information and thus have a better understanding of their customers, to be intrusive. In fact, the banker in his first interactions seeks for tangible and intangible elements allowing him to reach a minimum confidence level to establish a loan record having a reasonable chance of acceptance in order not to waste time.

- For entrepreneurs, social capital appears to be an element used to convince bankers of the success of their businesses. Particularly, the banker seems especially sensitive to financing networks, the integration of entrepreneurs in business networks, and their ability to recruit the right people. For the banker, financing networks will determine the future financing structure. The banker seeks to assess the future sources of funding available and possible risk transfers from shareholders to borrowers. For integration into business networks and the ability to recruit, the banker focuses instead on the potential development of the company and its future growth management. The social capital thus lends credibility to the project, to create trust in the banker, and, ultimately, improve loan access. Taking into account the previous results of

our quantitative analysis showing the positive effect of accessing bank loans, obtained at company creation, on the survival of the company, we suggest that social capital plays a mediating role in survival. Accordingly, our fourth hypothesis (i.e. the entrepreneur's social capital significantly increases his access to bank loans) is verified.

- The bank loan at the time of creation is perceived as a way of encouraging the survival and growth of the company in its early years. Interest charges and repayment of capital are not apprehended by the entrepreneur as an additional risk that reduces the chances of success of their project. This perception of loan is even stronger when the company created is large. This conclusion is consistent with the fact that VSBs are funded under more restrictive conditions than other SMEs, both as volume and cost (Robson et al. 2013).

- For entrepreneurs, the guarantees requested by banks are considered to be too important and constitute an obstacle to obtaining a bank loan in the creation phase. Banks require a personal guarantee (such as a home or land for owners) between 50 and 80% of the requested loan amount, especially when the amount of the loan exceeds a certain threshold. Other common types of bank collateral include the assets of the company, such as equipment and inventory or accounts receivable. The loan guarantee program from the Small Business Administration for start-up companies has helped most of them solve the guarantee problem. We cannot, however, conclude that loan guarantee programs provided by the state are the optimal solution. At firm level, obtaining a loan guarantee helps newly created firms access external finance and grow faster. Lelarge, Straer, and Thesmar (2010), however, show, in the French context, that it also significantly increases their probability of defaulting, suggesting that risk shifting may be a serious drawback for such loan guarantee programs. Moreover, these results can be mainly driven by the magnitude of loan constraints, or by the unavoidable distortions induced by the guarantee scheme used.

Discussion

In this section, we discuss the main implications of our findings. Whereas previous research on debt financing in emergent countries focuses on the problem of access or loan availability, we present a more integrative perspective explaining the relationships between debt financing and the survival of Cameroonian start-ups. Particularly, we provide insights into how entrepreneur choices and behaviours drive their willingness to use debt financing. Additionally, we highlight the implications of the debt financing for various stages and various amounts on the survival of start-up SMEs in Cameroon.

Choices and behaviours of entrepreneurs drive their willingness to use debt financing

The analysis of semi-structured interviews with entrepreneurs suggests that the majority choose to avoid requesting bank loans. Those entrepreneurs manage very small businesses and do not pursue a profit maximization goal. They seem to refuse relationships with bankers for two main reasons. First, bankers try to professionalize business projects, but interfere intimately and personally from those entrepreneurs' point of view. Second, bankers divert entrepreneurs from their principles and objectives, which cannot be confused with the rationality derived from financial theory.

Others entrepreneurs highlight a different identity. They undertake bigger projects and benefit from social capital, which banks seem a continuation of their relationships with peers or bankers aim to optimize project profitability according to financial principles. However, these entrepreneurs are a minority in our Cameroonian entrepreneur representative sample.

Therefore, our study adds a voice to previous works concerning the relationships between identity and entrepreneurship (Alsos et al. 2016; Coduras, Saiz-Alvarez, and Ruiz 2016; Fauchart and Gruber 2011). In the line with the work of Alsos et al. (2016), the present study stress that Cameroonians engage in entrepreneurial activity for different reasons and with different motivations. That is, their decisions may be guides by their principles or by the objectives they pursue. However, the predominance of principles (versus objectives) as a guide for decisions may be a Cameroonian specificity, and neither Fauchart and Gruber (2011) (Switzerland) nor Alsos et al. (2016) (Norway) sample show such an ascendancy of principles on financial concerns. This partly explains the small size of Cameroonian start-ups, as well as the low rate of survival. As such, we infer from preceding studies that Cameroonians exhibit a low readiness for entrepreneurship according to the concept forged by Coduras, Saiz-Alvarez, and Ruiz (2016), following the director of the main incubator in Dakar (cited by ElHadji, 2006): 'There is an African business model that works very well for those who have mastered it. It's just that this model is not formalized. There are great businessmen who operate in an informal environment and are able to enrich more that we who operate in the formal one. But if someone like you and me who have received a formation disconnected from this business tries to adventure in there, he cannot go anywhere'. Therefore, it seems reasonable to think that many African entrepreneurs avoid relationships with bankers who would impose formal conventions that have nothing to do with the rules of the business they decided to undertake. Ultimately, the low survival rate of these start-ups could be induced by the informal environment they operate in.

The implications of the debt financing for various stages and amounts on the survival of start-up SMEs in Cameroon

Prior studies (Abor and Biekpe 2007; Biekpe 2004; Tagoe, Nyarko, and Anuwa-Amarh 2005) have already stressed that most small businesses in sub-Saharan Africa fail in their first years of activity due to lack of support from traditional banks. In fact, Frelinghaus, Mostert, and Firer (2005) observe that, for SMEs, internal equity is inadequate and external equity is unavailable. Therefore, SMEs in developing countries have no choice but to rely on bank loans to fulfil their financial needs and ensure their survival.

Once again, our study allows refining the current picture by introducing some concerns about the timing of the bank financing and SME size.

The timing of bank financing

Our work reveals that Cameroonian start-ups SMEs need loan stage financing. Access to bank loans appears vital during the first three years of existence. This access is still significant as over time, but at a decreasing rate. Moreover, we showed loan excess for SMEs that exist for less than five years tends to lower their chance of survival, as well as a gearing ratio upper than 0.5.

As suggested by Tagoe, Nyarko, and Anuwa-Amarh (2005), SME financing needs to reflect their operational requirements. It is up to the bankers to accompany the growth of the SMEs in a balanced way. This is not a new idea, and Storey (1994) claims that key elements in the banker's decision to finance will not only be the expected default rate, but also the growth rate of the SMEs, because new SMEs that grow quickly need bank financing more than SMEs that grow slowly. Moreover, stage financing helps build a long term relationship between banks and their SMEs customers. According to Rajan (1992) and Petersen and Rajan (1994) this long-term lending relationship reduces the severity of informational asymmetries for banks by informing them about the borrower's loan history and account movements, as well as and the personal behaviour of the firm manager. Ultimately, this reduces the default risk, as well as the bankruptcy probability of the borrowing SMEs.

The size of the SMEs

Bank loans are backed by tangible collaterals. Therefore, our study shows that SME size impacts positively their access to bank loans. From a financial point of view, this result is in line with those found in developed countries (Rajan and Zingales, 1995) and fits the finance

theory (Harris and Raviv 1991). However, Cameroon is a developing country and the correlation between the amount of tangible collaterals and access to loans should warn researchers concerned by regional development. First, as SMEs grow, they generate more cash-flows (Tchankam et al. 2016). This means that the large SMEs are abler to fulfil their financial requirements from internal funding. Therefore, one can ask if the banks really contribute to regional development and stimulate entrepreneurs that need their help the most. Second, service industry stimulates the growth of most developed countries. European firms demonstrate that African countries can easily accommodate their service subsidies (Doh, Bunyaratavej, and Hahn 2009). However, the assets of many services companies consist mainly in intangibles, which makes it difficult to obtain loan financing. Ultimately, it appears that the preponderance of bank loans as external financing instruments largely influences the development of the Cameroonian private sector in a way that could be sub-optimal.

As a final reflection, we point the main limitation of this study. Our study highlights the heterogeneity of the Cameroonian SME environment. While many of them operate in a formal environment, the others run in a more informal sphere. We believe that future research should pay more attention to this dichotomy and use econometric methods, such as Heckman models, allowing the integration of self-censorship of entrepreneurs operating in the informal sphere and those who refuse recourse to bank loans.

References

Abor, J., and N. Biekpe. 2007. “Small Business Reliance on Bank Financing in Ghana.” *Emerging Markets Finance and Trade* 43 (4): 93–102.

Aghion P., T. Fally, and S. Scarpetta. 2007. “Credit Constraints as a Barrier to the Entry and post-Entry Growth of Firms.” Economic Policy 22 (52): 731–779.

Akdal, S. 2011. “How Do Firm Characteristics Affect Capital Structure? Some UK Evidence.” Available at SSRN: http://ssrn.com/abstract=1775706

Alsos, G. A., T. H. Clausen, U. Hytti, and S. Solvoll. 2016. “Entrepreneurs’ social identity and the preference of causal and effectual behaviours in start-up processes.” *Entrepreneurship & Regional Development* 28 (3–4): 234–258.

Asterbro, T., and I. Bernhardt. 2003. “Start-up Financing, Owner Characteristics, and Survival.” *Journal of Economics and Business* 55 (4): 303–319.

Audretsch, D. B. 1995. “Innovation, Growth and Survival.” *International Journal of Industrial Organization* 4: 441–457.

Bastelaer Van, T. 2002. “Does Social Capital Facilitate the Poor's Access to Credit?” In *Understanding and Measuring Social Capital: A Multidisciplinary Tool for Practitioners*, edited by C. Grootaert, and T. van Bastelaer, 237–264. The World Bank: Washington, DC.

Bastié, F., S. Cieply, and P. Cussy. 2011. “The Entrepreneur’s Mode of Entry: The Effect of Social and Financial Capital.” *Small Business Economics* 40 (4): 865–877.

Bastié F., Cieply S. 2013. “Le prêt à la création d’entreprises est-il efficace ?” *Revue Economique* 64 (3) : 421-432.

Bates, T., and A. Nucci. 1989. “An Analysis of Small Business Size and Rate of Discontinuance.” *Journal of Small Business Management* 27 (4): 1–7.

Berger, A. N., and G. F. Udell. 1998. "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle." *Journal of Banking & Finance* 22 (6–8): 613–673.

Biekpe, N. 2004. “Financing Small Business in Sub-Saharan Africa: Review of Some Key Credit Lending Models and Impact of Venture Capital.” *Journal of African Business* 5 (1): 29–44.

Biggs, T., and M. K. Shah. 2006. “African SMEs, Networks, and Manufacturing Performance.” *Journal of Banking and Finance* 30 (11): 3043–3066.

Boyer T., and R. Blazy. 2014. "Born to be Alive? The Survival of Innovative and Non-Innovative French Micro-Start-Ups." *Small Business Economics* 42 (4): 669–683.

Briozzo, A., H. Vigier, and Lisana B. Martinez. 2016. "Firm-Level Determinants of the Financing Decisions of Small and Medium Enterprises: Evidence from Argentina." *Latin American Business Review*, 17 (3): 245–268.

Calvino F., C. Criscuolo, and C. Menon. 2015. “Cross-country evidence on start-up dynamics.” OECD Science, Technology and Industry, Working Papers 2015/06.

Cochran, A. B. 1981. “Small Business Mortality Rates: A Review of the Literature.” *Journal of Small Business Management*, 19 (4): 50–59.

Coduras, A., J. M. Saiz-Alvarez, and J. Ruiz. 2016. “Measuring Readiness for Entrepreneurship: An Information Tool Proposal.” *Journal of Innovation and Knowledge* 1 (1): 99–108.

Cole, R. A., and J. D. Wolken, 1995. “Financial Services Used by Small Businesses: Evidence from the 1993 National Survey of Small Business Finances.” *Federal Reserve Bulletin,* July, 629–666.

Cole, R. A., and J. D. Wolken. 1996. “Bank and Nonbank Competition for Small Business Credit: Evidence from the 1987 and 1993 National Surveys of Small Business Finances.” *Federal Reserve Bulletin*, November, 983–995.

Coleman, S. 1998. “Access to Capital: A Comparison of Men- and Women-Owned Small Businesses.” Paper presented at the Babson-Kauffman Entrepreneurship Research Conference, Gent, Belgium, 21 May.

Coleman, S. 2002. "Small Firm Use of Debt: An Examination of the Smallest Small Firms." *Journal of Entrepreneurial Finance and Business Ventures* 7 (1): 51–76.
Coleman, S., and M. Carsky. 1996. “Financing Small Businesses: Strategies Employed by Women Entrepreneurs.” *The Journal of Applied Management and Entrepreneurship* 3 (1): 28–42.

Cooper, A. C., and F. J. Gimeno-Gascon. 1992. “Entrepreneurs, Processes of Founding, and New Firm Performance.” In *The State of the Art of Entrepreneurship*, edited by D. L. Sexton and J. D. Kasarda, 301–340. Boston: PWS-Kent Publishing Company.

Cooper A, F. Gimeno-Gascon, and C. Woo. 1994. “Initial human and financial capital as predictors of new venture performance.” *Journal of Business Venturing* 9 (5): 371–395.

Creswell, J. W., and V. L. Plano Clark. 2011. *Designing and Conducting Mixed Methods Research*. SAGE Publications

Dalberg Global Development Advisors. 2011. “Report on Support to SMEs in Developing Countries through Financial Intermediaries.” Accessed 3 June 2016. http://eudevdays.eu/sites/default/files/dalberg_sme-briefing-paper.pdf

Davidsson, P., and B. Honig. 2003. “The Role of Social and Human Capital Among Nascent Entrepreneurs.” *Journal of Business Venturing* 18 (3): 301–331.

De Meza, D., and D. Webb. 1998. “Credit Market Efficiency and Tax Policy in the Presence of Screening Costs.” *Journal of Public Economics* 36: 1–22.

Demirguc-Kunt, A., A. Maksimovic, V. T. Beck, and L. Laeven. 2006. “The determinants of financing obstacles.” *International Journal of Money and Finance* 25 (6): 932–952.

DiMaggio, P., and H. Louch. 1998. "Socially Embedded Consumer Transactions: For What Kinds of Purchases Do People Most Often Use Networks." *American Sociological Review* 63 (5): 619–637.

Diamond, D. 1991. "Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt." *Journal of Political Economy* 99: 688–721.

Doh, J. P., K. Bunyaratavej, and E. D., Hahn. 2009. "Separable but not Equal: The Location Determinants of Discrete Services Offshoring Activities." *Journal of International Business Studies* 40 (6): 926–943.

Dong, Y., and C. Men. 2014. "SME Financing in Emerging Markets: Firm Characteristics, Banking Structure and Institutions." *Emerging Markets Finance and Trade*, 50 (1): 120–149.

Dumez, H. 2009. "Identité, performance et pérennité organisationnelle." *Revue Française de Gestion* 35 (192): 91–94.

ElHadji, I.M. 2006. "The Role of the Source of Funding in the Model Business of the West-African SME: From the Convention of Financing to the Convention of Business." PhD dissertation, University of Paris-Dauphine.

Ennew, C. T., and M. R. Binks. 1994. "The Provision of Finance to Small Businesses: Does the Banking Relationship Constrain Performance?" *Journal of Small Business Finance*, 4 (1): 57–74.

Eurostat. 2014. *Eurostat Yearbook*. Available at http://ec.europa.eu/eurostat/ statistics-explained/index.php/Mortality_and_life_expectancy_statistics, Accessed 2016 May 22.

Fauchart, E., and M. Gruber. 2011. "Darwinians, Communitarians, and Missionaries: The Role of Founder Identity in Entrepreneurship." *Academy of Management Journal* 54 (5): 935–957.

Franks, J., and O. Sussman. 2005. "Financial Distress and Bank Restructuring of Small to Medium Size UK Companies." *Review of Finance* 9 (1): 65–96.

Frelinghaus, A., B. Mostert, and C. Firer. 2005. "Capital Structure and the Firm's Life Stage." *South African Journal of Business Management* 36 (4): 9–18.

Fried, V. H., and R. D. Hisrich. 1994. "Toward a Model of Venture Capital Investment Decision Making." *Financial Management* 23 (3): 28–37.

Gandja, S. V., C. Estay, and J-P. Tchankam. 2015. "Alternative Finance for Micro-Enterprises: A Foundation for Sustainable Development or Just Humanitarian Aid?" *Strategic Change* 24 (1): 33–47.

GEM. 2014. *Global Report*. Global Entrepreneurship Monitor. Available at http://www.gemconsortium.org/report, Accessed 2016 May 22.

Hancock, G. R., and R. O. Mueller. 2010. *The Reviewer's Guide to Quantitative Methods in the Social Sciences*. Routledge.

Harris, M., and A. Raviv. 1991. “The Theory of Capital Structure.” *Journal of Finance* 46 (1): 297–355.

Hart, O., and J. Moore. 1990. “Property Rights and the Nature of the Firm.” *Journal of Political Economy* 98 (6): 1119–1158.

IMF. 2016. *Country report N°16/7*. International Monetary Fund.

Jayawarna, D., O. Jones, and A., Macpherson. 2011. “New Business Creation and Regional Development: Enhancing Resource Acquisition in Areas of Social Deprivation.” *Entrepreneurship & Regional Development* 23 (9/10): 735–761.

Jensen, M., and W. Meckling. 1976. “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure.” *Journal of Financial Economics* 3: 305–360.

Kaplan, S. N., and P. Strömberg. 2004. “Characteristics, Contracts, and Actions: Evidence from Venture Capitalist Analyses.” *The Journal of Finance* 59 (5): 2177–2210.

Kraus, S., C. Richter, A. Brem, C.-F. Cheng, and M.-L. Chan. 2016. “Strategies for Reward-based Crowdfunding Campaigns.” *Journal of Innovation and Knowledge*, 1 (1): 13–23

Kumar, S., and P. Rao. 2016. “Financing Patterns of SMEs in India during 2006 to 2013 – An Empirical Analysis.” *Journal of Small Business & Entrepreneurship*, 28 (2): 97–131.

Lelarge, C., D. Straer, and D. Thesmar. 2010. “Entrepreneurship and Credit Constraints: Evidence from a French Loan Guarantee Program,” In *International Differences in Entrepreneurship*, edited by J. Lerner and A. Schoar. NBER Books, National Bureau of Economic Research, Inc.

Lin, N., W. M. Ensel, and J. C. Vaughn. 1981. “Social Resources and Strength of Ties: Structural Factors in Occupational Status Attainment.” *American Sociological Review* 46 (4): 393–405.

Lantz, J. S, and Sahut, J. M. 2009. “Active Financial Intermediation and Market Efficiency: The Case of Fast-growing Firms Financed by Venture Capitalists.” *International Journal of Business* 14 (4): 321–339.

Liu, M., and J. Yu. 2008. “Financial Structure, Development of Small and Medium Enterprises, and Income Distribution in the People’s Republic of China.” *Asian Development Review* 25 (1/2): 135–155.

Méndez-Picazo, M-T., M-A. Galindo-Martín, and D. Ribeiro-Soriano. 2012. “Governance, Entrepreneurship and Economic Growth.” *Entrepreneurship and Regional Development* 24: 865–877.

Miles, M., and M. Huberman. 1994. *An Expanded Sourcebook – Qualitative Data Analysis*. Thousand Oaks: Sage Publications.

Minnis, M., and A. Sutherland. 2016. “Financial Statements as Monitoring Mechanisms: Evidence from Small Commercial Loans.” *Chicago Booth Research Paper* No. 13–75.

Moati, P., and L. Pouquet. 1996. “L'évolution de l'emploi dans l'industrie manufacturière: les déterminants sectoriels et micro-économiques.” *Cahier de recherche du CRÉDOC* 92 juin.

Montoro-Sanchez, Ma. A., and D. Ribeiro-Soriano. 2011. “The Challenges of Defining and Studying Contemporary Entrepreneurship.” *Canadian Journal of Administrative Sciences* 28: 297–301.

Myers, S. C. 1977. “Determinants of Corporate Borrowing.” *Journal of Financial Economics* 5 (2): 147–175.

Myers, S. C., and N. Majluf. 1984. “Corporate Financing and Investment Decisions when Firms Have Information that Investors do not Have.” *Journal of Financial Economics* 13 (2): 187–221.

Nicholas, C., R. Naresh, and P. Jukka. 2014. “Success and Failure in Turnaround Attempts. An Analysis of SMEs within the Finnish Restructuring of Enterprises Act.” *Entrepreneurship & Regional Development* (1–2): 123–146.

Ondoa, A. H., M. Douzounet, and M. Kouty. 2013. “Social Capital and Entrepreneurship in Cameroon.” *ICBE Policy Brief* 11.

Petersen, M. A., and R. G. Rajan. 1994. “The Benefits of Lending Relationships: Evidence from Small Business Data.” *The Journal of Finance* 49 (1): 3–37.

Putnam, R., R. Leonardi, and R. Nanetti. 1993. *Making Democracy Work: Civic Traditions in Modern Italy.* Princeton, NJ: Princeton University Press.

Rajan, R. G. 1992. “Insiders and Outsiders: The Choice Between Informed and Arm’s-Length Debt.” *Journal of Finance* 47 (4): 1367–1406.

Rajan, G. R., and R. Zingales. 1995. “What do we Know about Capital Structure? Some Evidence from International Data.” *Journal of Finance* 50 (5): 1421–1460.

Riding, A., G. H. Haines, and R. Thomas. 1994. “The Canadian Small Business-Bank Interface: A Recursive Model.” *Entrepreneurship Theory and Practice* 18(4): 5–24.

Robson, P., C. Akuetteh, I. Stone, P. Westhead, and M. Wright. 2013. “Credit-rationing and Entrepreneurial Experience: Evidence from a Resource Deficit Context.” *Entrepreneurship & Regional Development* 25 (5/6): 349–375.

Sabatini, F. 2008. “Social Capital and the Quality of Economic Development.” *Kyklos* 61 (3): 466–499.

Scherr, F. C., T. F. Sugrue, and J. B. Ward. 1993. “Financing the Small Firm Start-Up: Determinants of Debt Use.” *The Journal of Small Business Finance* 3 (1): 17–36.

Seibel, H. 2000. “How Values Create Value: Social Capital in Microfinance – The Case of Philippines, Rural Finance.” *Working Paper* B8, International Fund for Agricultural Development.

Shane, S., and D. Cable. 2002. “Network Ties, Reputation, and the Financing of New Ventures.” *Management Science* 48 (3): 364–381.

Simón-Moya, V., L. Revuelto-Taboada, and D. Ribeiro-Soriano. 2012. “Are Success and Survival Factors the Same for Social and Business Ventures?” *Service Business* 6 (2): 219–242.

Stangler, D., and P. Kedrosky. 2010. *Neutralism and Entrepreneurship: The Structural Dynamics of Startups, Young Firms, and Job Creation.* Kauffman Foundation Research Series: Firm Formation and Economic Growth, Kansas City: Kauffman Foundation.

Stiglitz J. E., and A. Weiss. 1981. “Credit Rationing in Markets with Imperfect Information.” *American Economic Review* 71 (3): 393–410.

Storey, D. J. 1994. “The Role of Legal Status in Influencing Bank Financing and New Firm Growth.” *Applied Economics* 26 (2): 129–136.

Tagoe, N., E. Nyarko, and E. Anuwa-Amarh. 2005. “Financial Challenges Facing Urban SMEs Under Financial Sector Liberalization in Ghana.” *Journal of Small Business Management* 43 (3): 331–343.

Tchankam, J. P., J. Feudjo, R. Gandja, and S. Valant. 2016. “The Determinants of Financial Structure: How to Explain the ‘Paradox of Insolvency and Debt” among SMEs in Cameroon?” *Research in International Business and Finance* 36 (1): 73–84.

Teurlai, J.-C. 2004. “Comment modéliser les déterminants de la survie et de la croissance des jeunes entreprises?” *Cahier de Recherche* 197 du Centre de Recherche pour l’Étude et l’Observation des Conditions de Vie, Février.

Uphoff, N. 2000. “Understanding social capital: learning from the analysis and experience of participation.” In *Social Capital: A Multifaceted Perspective*, edited by P. Dasgupta, and I. Serageldin, 215–249. The World Bank: Washington, DC.

Uzzi, B. 1999. “Embeddedness in the Making of Financial Capital: How Social Relations and Networks Benefit Firms Seeking Financing.” *American Sociological Review* 64 (4): 481–505.

Vos, E., and C. Forlong. 1996. "The Agency Advantage of Debt over the Lifecycle of the Firm." *Journal of Entrepreneurial and Small Business Finance* 5 (3): 193–211.

Weinberg, J. A. 1994. “Firm Size, Finance, and Investment.” *Economic Quarterly* 80 (1): 19–40.

Weinstein, D., and Y. Yafeh. 1998. “On the Costs of a Bank-centered Financial System: Evidence from the Changing Main Bank Relations in Japan.” *Journal of Finance* 53 (2): 635–72.

Westlund H., and F. Adam. 2010. “Social Capital and Economic Performance: A Meta-analysis of 65 Studies.” *European Planning Studies* 18 (6): 893–919.

Wiklund, J., and D. A. Shepherd. 2008. “Portfolio Entrepreneurship: Habitual and Novice Founders, New Entry, and Mode of Organizing.” *Entrepreneurship Theory and Practice* 32 (4): 701–725.

Wu, J., J. Song, and C. Zeng. 2008. “An Empirical Evidence of Small Business Financing in China.” *Management Research News* 31 (12): 959–975.

Zabri, S. M., A. Kamilah, and J. Lean. 2014. “Owner/managers' Financing Preferences and the Proportion of Firm's Capital Structure: Evidence from Successful SMEs in Malaysia.” *The International Conference on Business Strategy and Social Sciences 2014*, Kuala Lumpur, Malaysia, 16–17 August.

Table 1: Synthesis of study variables

Variables	Name	Type	Measurement indicators
Explained Variable			
Company survival	**PEREN**	Binary	0 or 1 according to the number of years in existence for the 3 sub-models
Explanatory Variables			
Access to bank loans	**ACCRED**	Binary	1 if the company has obtained a loan at its creation and 0 otherwise.
Loan amount	**VOLCRED**	Multimodal	1 if this amount is below XOF 20 million, 2 if this amount is between XOF 20 and 100 million, and 3 if this amount is beyond XOF 100 million
Share of debt in initial funding	**CONDETTE**	Multimodal	0 if the value of the debt ratio is zero, 1 if the value falls between 0 and 0.5, and 2 if it is equal to 0.5 and above
Control Variables			
Entrepreneurial ownership	**PROPMANAG**	Multimodal	1 if the share of the capital held by the entrepreneur is less than 25%, 2 if it is 25–50%, 3 if it is 51–75%, and 4 if it is above 75%
Sales	**CA**	Metric	Natural logarithm of the total company sales
Industry innovation	**BRANCHACT**	Dummy	1 if the sector is low innovative and 0 otherwise

Table 2: Effect of debt on start-up survival

		Less than 3 years		From 3 to 5 years		More than 5 years	
		Yes	**No**	**Yes**	**No**	**Yes**	**No**
ACCRED	Yes	2267	483	1815	1124	1123	1583
	No	3172	1428	2301	2111	1376	3268
		φ=21,87	**P=0,00*** **	**φ =19,27**	**P=0,00*** **	**φ =13,26**	**P=0,03** **
VOLCRED	No loan	3161	1415	2284	2087	1356	3251
	0–20 million	1048	287	608	449	643	687
	20–100 million	861	124	633	357	373	468
	< 100 million	369	85	291	341	127	445
		χ^2=15,41	**P=0,02*** **	**χ^2=11,63**	**P=0,05** **	**χ^2=6,30**	**P=0,09* **
CONDETTE	Zero	3161	1415	2284	2087	1356	3251
	0–0,5	1827	263	1363	744	860	1072
	0.5 and more	451	233	469	403	283	528
		χ^2=13,19	**P=0,03** **	**χ^2=18,13**	**P=0,02** **	**χ^2=12,20**	**P=0,04** **

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Note: A Pearson correlation coefficient estimated for two binary variables will return the Phi coefficient **φ**. The square of the Phi coefficient χ^2 is related to the chi-square statistic for a 2×2 contingency table.

Table 3: Indebtedness during the start-up phase and company survival

	Company survival		
	Less than 3 years (PEREN1)	**From 3 to 5 years (PEREN2)**	**More than 5 years (PEREN3)**
ACCRED	4,563***	1,928***	1,840**
VOLCRED			
No Loan	-3,734***	-1,062**	1,280
From 0,1 to 20 millions	4,236**	2,421**	1,095**
From 20 to 100 millions	2,209***	1,024***	0,215*
More than 100 millions	-1,940**	-1,875***	0,571
CONDETTE			
From 0 To 0,5	0,628***	0,632***	1,327*
0,5 and more	-0,132***	-0,298**	-0,192**
Zero	-1,505**	-1,637**	-1.458
PROPMANAG			
Less than 25%	-0,011**	-0,021*	-0,092
From 25 to 50%	1,056**	1,422**	1,822***
From 51 to 75%	2,846**	2,215***	1,142**
More than 75%	0,831***	0,908***	0,716*
CA	0,133**	0,087**	0,009*
BRANACT	0,077**	0,028**	0,047**
Intercept	-3,829***	-1,839**	-5,579***
-2log-vraisemblance	**348,30**	**276,84**	**452,64**
Cox and Snell R^2	**0,216**	**0,155**	**0,085**
Nagelkerke R^2	**0,304**	**0,251**	**0,114**
Chi-2	**85,12*** **	**58,71*** **	**31,17*** **

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Synthesis of hypotheses testing

Hypothesis tested	Sign of the influence exercised by variables related to the structure of the initial capital on survival		Validation of the hypothesis
	Expected	Observed	
H1: ***Access to bank loans at creation significantly influences the survival of a young company.***	+	+	Yes
H2: ***The amount of bank loans obtained by companies in the start-up phase has a significant curvilinear influence on their survival.***	+/-	+/-	Yes
H3: ***The weight of debt in the initial business start-up financing has a significant curvilinear influence on its survival.***	+/-	+/-	Yes