# THE CHARACTERISTICS OF FINANCIAL BOOSTRAPPERS IN SENEGAL

#### **ABSTRACT**

While Africa plays home to an imposing start up scene, local entrepreneurs still face numerous challenges, and funding is a key one of them. As West African entrepreneurs encounter many financing barriers, they often use creative funding sources and strategies in order to bypass the traditional sources of loans. The use of untraditional financial sources is known as bootstrap financing, which refers to a method of financing using internal sources to attain required capital rather than external funds. The purpose of this study is to determine the link between the creative financial alternatives used by the Senegalese entrepreneurs. To proceed, we surveyed 103 MSMEs in Dakar. Firstly, we examined the univariate statistics, and secondly, we use tests such as One-way ANOVA and Chi-square. Results highlighted the predominance of self-funded methods, the impact of the level of education and the minimization of the capital invested (such as the use of social networks), when studying bootstrapping techniques employed by Senegalese managers. Results contribute to the lack of research related to the topic, especially when conducted in the West African region, which is strongly characterized by information asymmetry and informality.

Keywords: financial bootstrapping, entrepreneurship, small and medium businesses.

#### RESUME

Alors que le continent africain est au cœur d'une effervescence entrepreneurial, les entrepreneurs locaux sont toujours confrontés à de nombreux défis, dont le financement. En effet, les entrepreneurs ouest-Africains rencontrent de nombreux obstacles financiers, et utilisent souvent des sources de financement et des stratégies créatives permettant de contourner les sources traditionnelles de prêts. L'usage de sources financières non traditionnelles est connu sous le nom de financement bootstrap, qui fait référence à une méthode de financement utilisant des sources internes pour atteindre le capital requis plutôt que des fonds externes. Le but de cette étude est de déterminer le lien entre les alternatives financières créatives utilisées par les entrepreneurs Sénégalais. L'étude porte sur 103 TPMEs opérant à Dakar. Premièrement, nous avons examiné les statistiques uni-variées, et deuxièmement, nous utilisons des tests tels que le test d'analyse de la variance (ANOVA) et le test de Chi-2. Les résultats ont mis en évidence la prédominance de l'usage des techniques d'autofinancement, l'impact du niveau académique et la minimisation du capital investi (avec l'usage des réseaux sociaux). L'étude contribue à la recherche sur le sujet, en particulier lorsqu'elle est menée dans la région de l'Afrique de l'Ouest, qui est fortement caractérisée par l'asymétrie de l'information et l'informalité.

Mots clés: financement boostrap, entrepreneuriat, petites et moyennes entreprises

### I. Introduction

#### 1.1 Problem statement

While Africa plays home to an imposing start up scene, local entrepreneurs still face numerous challenges, and funding is a key one of them. Hence, access to finance is the first obstacle to success for entrepreneurs in developing countries and West African entrepreneurs encounter many financing barriers such as high interest rates or collateral requirements.

Startups businesses usually rely on debt capital to finance initial operations. On one hand, a minority of entrepreneurs will have access to financings provided by banks, but will also face a large debt service at a time when other start-up costs are high and revenues are low (Van Auken & Neeley, 1996). On the other hand, the majority of the entrepreneurs will receive loan application denials as they might not have sufficient collaterals (mortgage, a sufficient amount of initial deposit, certified financial statements, transaction history reports, purchase orders etc.) to cover their financing needs. Therefore, most of them must search for alternative funding options to make up for cash shortfalls (Smith, 2009). West African entrepreneurs often use creative funding sources and strategies in order to bypass the traditional sources of loans (Ebben & Johnson, 2006; Van Auken & Neeley, 1996). The use of untraditionnal financial sources is known as bootstrap financing.

Africa's entrepreneurial energy is different from the ones observed in developed countries. In addition, the lack of empirical evidence of bootstrap financing in this region can be explained by the fact that the majority of African businesses are highly informal. As highlighted by Stein and Hommes (2013), around 80 percent of all enterprises in developing economies (approximately 280 to 340 million) are informal firms, and the informal sector in developing economies absorbs around 60 percent of the labor force. Researcher studies related to bootstrapping focus on developed regions such as United States (Cassar (2004), Schofield (2015)), Belgium (Seghers et al., 2012), Sweden (Winborg and Landstrom (2001)). Limited research on the subject was proceeded in African regions such as Zimbabwe (Munyanyi, 2015), South Africa (Fatoki, 2013; Fatoki, 2014; Zwane and Nyide, 2017) and Nigeria (Afolabi *et al.* 2014).

# 1.2 Aim and objectives

The main aim of this study is to investigate about the use of financial bootstrapping by the MSMEs (micro, small and medium enterprises) in Senegal, as an alternative funding strategy. The results of our study will contribute on the lack of research related to the topic, especially when conducted in the West African regions, which are strongly characterized by information asymmetries and informality.

In order to address the aim of this study, the following objectives have been formulated:

- to identify financial bootstrapping techniques used by MSMEs in Senegal;
- to determine whether demographics characteristics such as the gender or level of education have an impact on the selection of bootstrap financing techniques;
- to compare the effects of using creative financial techniques in formal versus informal businesses;
- to investigate whether the size of MSMEs affect the use of bootstrapping methods.

Results obtained from this study will provide knowledge of creative financial sources to West African entrepreneurs. For a business manager, knowing alternatives to debt or equity financing could help enhance competitiveness, possibly increasing chances of business success and long-term survival. Increased business survival rates may also allow small business entrepreneurs to contribute to fueling the economy, providing employment, and driving innovation.

#### II. Literature review

Multiple roadblocks mark the trail for a small business entrepreneur to obtain external financing. Banks rarely approve requested loans by startups, while other sources of raising capital are limited and conditioned by financial historical data, information asymmetries or collateral requirements. Most startup businesses facing significant difficulties in raising finance employ financial alternatives such as using personal savings or raising funds from family and friends (Bhide, 2000).

## 2.1 Concept of bootstrapping

Bootstrapping refers to a method of financing using internal sources to attain required capital rather than external funds (debt provided by loan institutions, venture capital financiers, or any other external means) (Ebben & Johnson, 2006; Van Auken & Neeley, 1996). Freear, Sohl and Wetszel (2002) defined bootstrap financing as « highly creative ways of acquiring the use of resources without borrowing money or raising equity financing from traditional sources ».

In accordance with Brush (2008), the entrepreneurs' abilities rotate around three axis: visioning, bootstrapping and social skills. According to Lahm and Little (2005) bootstrapping is entrepreneurship in its purest form, as it involves a highly creative process of transformation the human capital into financial capital. On line with Van Auken and Carter (1989), we can identify personal savings or the sale of personal assets as sources of equity, and friends and relatives as a source of debt. Bhide (1992) simply define financial bootstrapping as "launching new ventures with modest personal funds". Van Auken and Neeley (2010) further refined the bootstrapping definition when considering only sources of capital used after exhausting personal savings (with the exclusion of personal capital and loans from banks). According to Vanacker and Sels (2009) and Zwane and Nyide (2017), we define financial bootstrapping as "the use of creative ways for meeting the need for resources without relying on long-term external finance from debt holders and/or new owners".

#### 2.2 Theoretical framework

As Schofield (2015), our theoretical basis is set on two foundations: the pecking order theory and the theory of enactment. The pecking order indicates that entrepreneurs focus predominantly on « the use of internal financing methods prior to external methods of debt or equity financing » (Myers, 1984; Donaldson, 1961; Paul et. al, 2007; Cui, Zha & Zhang, 2010; Degryse, de Goeij, & Kappert, 2012; Minola & Cassia, 2013). This theory was first developed by researchers such as Donaldson (1961) and Myers (1984). Scholars have highlighted that entrepreneurs tend to follow the pecking order due to issues such as information asymmetries, financial institutions conditions or cost associated to debt (Minola & Cassia, 2013; Paul & al. 2007). Because capital raising from external financings is difficult to attain, entrepreneurs use bootstrapping methods out of necessity ((Osei-Assibey et al., 2012; Winborg & Landstrom, 2001).

On line with the pecking order theory, authors support the application of the enactment theory by entrepreneurs who actively use their environment to create financial

opportunities (Lam, 2010; Daft and Weick, 1984). Those opportunities could be linked to bootstrap financing techniques such as delays payments to suppliers, run business at home or purchase used machinery /equipment (Neeley & Van Auken, 2010; Lam, 2010; Perry et al., 2011).

# 2.3 Types of bootstrapping

The pioneering studies by Winborg and Landstrom (2001) and Tommory (2010) identified 32 bootstrapping methods. Winborg and Landstrom (2001) came up with six bootstrapping clusters and these clusters cover the major activities usually understood as bootstrapping namely: 1) Delaying Payments, 2 )Minimizing Accounts Receivable, 3) Minimizing Investment, 4) Private Owner Financing,5) Sharing Resources with Other Businesses, 6) Use of Government Subsidies. Vanacter et al. (2009) presented four types of bootstrapping options namely: bootstrapping product development, bootstrapping business development, bootstrapping to minimize the need for outside capital financing, and bootstrapping to minimize the need for capital.

According to Zwane and Nyide (2017), we identified the following categories: (a) self-funded methods (b) customer related methods, (c) delaying payments, (d) minimization of capital invested, (e) joint utilization and (f) cooperative finance.

Table 1
Categories of bootstrap financing techniques

	Use Personal funds for Business Expenses
	Obtain Loans from Relative or Friends
SELF FUNDED (owner financing)	Withhold Salary When Necessary
METHODS	Employ Relatives/Friends
	Rely on Income from Outside Employment
	Run the Business Completely in the Home
	Obtain Payment in Advance from Customers
avama	Cease Business with Customers Who Pay Late
<b>CUSTOMER RELATED METHODS</b> (Minimization of accounts receivables)	Offer Customers Discount for Cash Payment
	Deliberately Choose Customers Who Pay Quickly
	Use Interest on Over Due Customer Accounts
	Deliberately Delay Payment to Suppliers
DELAYING PAYMENTS	Buy Used or Borrowed Equipment Instead of New Equipment
	Deliberately Delay Tax Payments
	Buy on Consignment from Suppliers
MINIMIZATION OF CAPITAL INVESTED	Coordinate Purchases with Other Businesses
II. (V Elo I Elo	Minimize operational costs using social networks
	Share Office Space with Others
JOINT UTILIZATION	Share Equipment with Other Businesses
	Share Employees with Other Businesses
COOPERATIVE FINANCE	Obtain microcredit lending from tontines

# 2.4 The practice of bootstrap financing strategies among small enterprises

The bootstrap financing method is usually used by startups (Cassar, 2004; Ebben & Johnson, 2006) and allow businesses to continue the course of its operations at a time when obtaining external financing sources is not realistic. Indeed, smaller enterprises, more likely to be resource constrained, may have a tendency to bootstrap available resources in order to achieve their objectives. Besides, bootstrap financing is easy to obtain and do not require a business plan or a collateral (Auken & Neeley, 1996). Even if there is little evidence about the entrepreneurs pursuing the use of bootstrapping techniques after the startup phase, the studies does not indicate an absence of the practice for growing businesses (Cassar et al., 2004), especially in developing countries.

Based on the categories previously identified, several strategies can be adopted by entrepreneurs while using bootstrap financing techniques. The first rule for a bootstrapper should be to used "self-funded method", such as obtaining loans from family and friends, providing free work or hiring close relatives with low or no salary, as well as working from home (thus eliminating the cost of renting), in order to reduce costs.

The SME manager will chose to "minimize its accounts receivables" by encouraging its customers to pay as soon as possible in order to get cash in hand. A good

strategy may also involve "delaying payments" by negotiating the best terms with suppliers (as this method will effectively reduce short-term expenditure).

It is also possible to "minimize the capital invested" when the business manager buy on consignment from suppliers<sup>1</sup>, coordinate purchases with others (i.e reducing the costs related to customs fees if the stock was bought outside of the home country), or advertise its products through social networks. Our study introduced this new approach in regards to the impact of the social media on businesses revenues. In fact, nowadays, entrepreneurs (regardless of their size and country), heavily rely on social networks (mainly using facebook, instagram and twitter) to build their brands and minimize marketing costs.

An additional option reside on the "joint utilization" of resources such as shared physical spaces, goods, equipment or human resources. This technique is an opportunity to establish business partnerships where parties can benefit from the best advantages, and thereby, minimize costs associated with transportation, storage and even getting volume discounts.

Finally, with regards to the West African context, business managers frequently use "cooperative finance" such as tontines to fund their activities. Tontines are cooperative microcredit schemes organized among relatives, neighbors, friends or work colleagues. Hence, those self-organized savings systems helps borrowers to access credit as well as to avoid prohibitively high interest rates. This last bootstrap category is yet not to be found in the literature as it is specific and typical to the African context.

## III. <u>Hypothesis development</u>

In the second stage of our theoretical development, we proceed to analyze a set of five hypotheses involving owner and firm characteristics, together with the use of financial bootstrapping.

#### 3.1 Gender

In financing decisions, gender plays a significant role in behavior of individuals (Verhuel & Thurik, 2001). Hence, women entrepreneur's ability to bootstrap was a focus of attention of several authors (Hill, Leitch and Harrison 2006; Brush, Carter and Gatewood 2006). Firstly, Carter, Brush and Greene (2003) were the first to relate differences between genders and the use of bootstrapping techniques. Morris et al. (2006) also examined the fact that women entrepreneurs tend to avoid external funding and the authors found that females had a strong desire not to be obligated to others. Similarly, Hokkanen et al. (1998) highlighted that women rely more on personal savings to finance their business rather than depending on debt (as they are less willing to engage collateral or other personal guarantees (Coleman, 2000). The following hypothesis were tested:

H1: There was no significant difference between the mean or median responses relating to the perceived importance of the use of bootstrap financing techniques for entrepreneurs with different gender.

H2: Female Senegalese entrepreneurs tend to use more often bootstrap techniques than men.

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<sup>&</sup>lt;sup>1</sup> Consignment is a business arrangement in which a business, also referred to as a consignee, agrees to pay a seller (or consignor) for merchandise after the item sells. This financial bootstrap technique improves cash flow as 1) any products that do not sell can be returned to consignors 2) payments can be made days or weeks after the sale.

## 3.2 **Level of Education**

The level of education is a determinant variable studied by several authors. Storey (1994) explained that higher level of education provides greater confidence in dealing with bankers and other financial parties. Further, Coleman (2007) established that education is positively related to the use of financial techniques as financial education and training increases the knowledge of available sources of funding (as well as their advantages, and disadvantages). Muhanna (2007) identified the ability of South African entrepreneurs to overcome resource constraints (by using education and social networks establishment) as a critical factor of success. Therefore, higher education levels of entrepreneurs have a positive influence on their capacity to raise funds, and consequently, improve their access to capital (Carter, Brush and Greene, 2003). Finally, Neeley and Van Auken (2010) found a statistical and positive relation between education and the use of financial bootstrapping methods. The authors established that highly educated entrepreneurs use more financial bootstrapping methods than less educated ones.

Furthermore, our hypothesis were the following:

H3: Entrepreneurs with higher levels of education tend to use more often financial bootstrapping methods then entrepreneurs with lower levels of education.

## 3.3 <u>Legal status</u>

As the Stein and Hommes (2013) addresses the informal MSMEs as the "missing majority", it has been estimated that 80 percent of all enterprises in developing economies (approximately 280 to 340 million) are informal firms<sup>2</sup>. Thereby, Ayyagari et al., (2010a; 2010b) implied that unregistered firms mostly rely on informal financing, which impacted on the enterprise with lower growth and increased the illegality status. In addition, information asymmetry is more acute in case of MSMEs as banks are unable to accurately gauge the level of risk involved in lending (Ohanga, 2005). Thus, small enterprises operating in the informal sector are not connected into the formal financial and investment circuit.

Given the financial constraints faced by informal enterprises, our study leads to the following hypothesis:

H4: There is a dependent relation between legal status and the use of bootstrap techniques used by Senegalese entrepreneurs.

#### 3.4 Size of the business

The majority of the research related to financial bootstrapping were conducted considering small firms. Indeed, for business development purposes, it appeared that small firms highly perform bootstrap financing methods when compared with larger firms (Harrison, Mason and Girling 2004). According to Chen (2004), the pecking order theory "assumes a negative relationship between firm size and leverage as information asymmetries are higher with SMEs". There is not a standard measurement to identify the size of an SME as various instruments are used such as total asset value, sales or number of permanent employees ((Osei-Assibey, Bokpin, & Twerefou, 2011). In our study, the size of business was determined by the number of permanent employees.

Based on previous research, our hypothesis are displayed as follows:

H5: Smaller enterprises tend to use more often financial bootstrapping methods

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<sup>&</sup>lt;sup>2</sup> IFC Enterprise Finance Gap Database (2011)

### IV. Research design and sampling methodology

The study aimed to describe the use of certain bootstrapping techniques against the characteristics of the Senegalese MSMEs. A questionnaire survey was developed based on previous research (Van Auken (2001), Schofield (2015) and (Winborg & Landstrom, 2001)) and pretested through personal interviews with entrepreneurs. These pretests allowed us to optimize the questionnaire by including finance alternatives specific to the Senegalese context and to make the questionnaire comprehensible for local entrepreneurs.

The survey was organized in four main sections. The first section collected information on the entrepreneurs' profile such as their gender or academic level. The second section asked respondents about the business demographics (legal status, experience, sector, capital structure, number of employees and business organization). The third section gathered the details on profitability questions and the entrepreneurs' ties with finance institutions (existence of a bank account, level of satisfaction with financial services, loan application and issues). The final section interrogated respondents to what degree they are familiar with various bootstrap finance alternatives using a five-point Likert scale (ranging from 0 if "Never employed" to 5 if "Always employed"). The majority of the techniques were associated with the study performed by Neeley and Van Auken (1998, 2009), Winborg and Landstrom (2001), Lam (2010) and Schofield (2015). Yet some techniques were omitted based on the Senegalese context, while other techniques were added (such as funding using tontines or minimizing operational costs using social networks etc.).

Subsequently, the questionnaire was submitted on December 19, 2017, to a random sample of entrepreneurs located in multiple districts in Dakar (Ponty, Avenue Lamine Guèye, Marché Sandaga, Sacré Cœur, VDN, Liberté 6 extension, Marché HLM, Yoff, Almadies, Foire). A total of 103 usable questionnaires were completed and returned. The disadvantage of self-reported data is that entrepreneurs could be influenced by their perceptions of what seems to be a desirable response rather than indicating their actual knowledge of finance alternatives. To further motivate our respondents to give accurate data, we also promised strict confidentiality.

The first stage of our study were examined using univariate statistics (frequencies, mean and standard deviations) to provide insight into the characteristics of the sample composed by MSMEs and their sources of capital. On the second stage, alike several authors (Schinck and Sarkar, 2012, Neeley and Van Auken (1998, 2009)), we used tests such as One-way ANOVA and chi-square tests).

#### V. Empirical results

The reliability of the survey responses was evaluated by means of determining the Cronbach's Alpha of the qualifying responses. A Cronbach's Alpha of 0.5921 was achieved which is lower than 0.70. Nunnally et al. (1978) indicated that new developed measures can be accepted with an alpha value of 0.60, otherwise, 0.70 should be the threshold. However, considering the use of these scales for the first time in a new culture and the degree of information asymmetries commonly experienced in Western African countries, the cut off value for the alpha coefficient was set up for 0.55 for all the scales (self-developed scales). We then consider our Cronbach's Alpha score of 0.5921 as acceptably reliable given the Senegalese context.

The first part of our research question focuses on the identification of the financial bootstrap techniques practiced by Senegalese small business owners.

We first present the demographics characteristics of the respondents (displayed in the two first sections of the questionnaire) in Table 2. With regards to targeted localizations in Dakar, entrepreneurs surveyed were mostly males (80.58%) and retailers (63.11%). The sample is mainly composed by informal businesses (80.20%) which fairly represents the Senegalese business environment. The two main academic levels achieved were coranic education or preschool, and secondary education (both established at 32.67%). The average business age of small businesses belonging to the surveyed entrepreneurs was 13.1 years old, with a maximum of 59 years of existence. The most common business formations were sole proprietorships (67.65%), and the average number of employees per business was 4.29 employees (with only one business counting for 60 employees).

Table 3 depicted the main financial sources of capital explored by the entrepreneurs surveyed (displayed in the third section of the survey). It appeared that 79.12% of the businesses were profitable within the three years following their inception. For the last five years, the business profitability trend was estimated as stable by 52.94% of the entrepreneurs. Only 60.78% of the respondents opened and used a bank account (given that the majority of the businesses were informal) for 9.49 years in average. Although 39.73% of the bank holders are satisfied about the customer service entertained with their financial institution, 32.88% estimated their financial ties as unsatisfactory, while 23.29% simply admitted their absence of interference. A minority of bank account holders (36%) requested a loan (20% to banks and 20% to microfinance institutions) as the majority identified the high interest rates as their main barrier to access to credit and privileged funding through personal funds (52,31%), tontines (4,62%), or loans from friends (1,54%).

With regards to the fact that Senegalese entrepreneurs reluctantly share their financial information, only twenty (20) respondents answered to the questions related to the loan amount requested (mainly comprised between 200 000 and 3 000 000 F CFA) for investment purposes. A fewer respondents gave further details related to the rejection of their loan application (as it appears that credit history, lack of collateral and the amount of personal capital contribution constituted the main reasons).

Table 2
Business demographics of the MSMEs surveyed (N=103)

Gender       19.42%         Male       80.58%         Academic level       32.67%         Coranic education / Preschool       32.67%         Elementary       15.84%         Secondary       32.67%         University       18.81%         Legal status       19.80%         Informal       80.20%         Formal       19.80%         Business sectors       8         Retail       63.11%         Wholesale       12.62%         Fashion couture       05.83%         Cosmetics       04.85%         Manufacturing       01.94%         Restaurant       01.94%         Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       ≤ 3         ≤ 3       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership         Sole Proprietorship       67.65%         Partnership       32.35%         Number of employees       ≤ 3         ≤ 3       73.47%         4-10       18.37% <th></th> <th>Percentage of Respondents</th>		Percentage of Respondents
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Retail $63.11\%$ Wholesale $12.62\%$ Fashion couture $05.83\%$ Cosmetics $04.85\%$ Manufacturing $01.94\%$ Restaurant $01.94\%$ Communications $01.94\%$ Tourism $01.94\%$ Misc. $05.83\%$ Years in operation $22.33\%$ $4-10$ $23.30\%$ $11-20$ $38.84\%$ $21-60$ $15.53\%$ Ownership $67.65\%$ Partnership $67.65\%$ Number of employees $23.30\%$ $4-10$ $18.37\%$ $11-20$ $05.10\%$	Formal	19.80%
Wholesale       12.62%         Fashion couture       05.83%         Cosmetics       04.85%         Manufacturing       01.94%         Restaurant       01.94%         Communications       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       32.35%         Number of employees       32.37%         4-10       18.37%         11-20       05.10%	<b>Business sectors</b>	
Fashion couture       05.83%         Cosmetics       04.85%         Manufacturing       01.94%         Restaurant       01.94%         Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       22.33% $4$ -10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       67.65%         Partnership       32.35%         Number of employees $\leq$ 3 $\leq$ 3       73.47% $4$ -10       18.37%         11-20       05.10%	Retail	63.11%
Cosmetics       04.85%         Manufacturing       01.94%         Restaurant       01.94%         Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       ≤3         ≤3       73.47%         4-10       18.37%         11-20       05.10%	Wholesale	12.62%
Manufacturing       01.94%         Restaurant       01.94%         Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       ≤ 3         ≤ 3       73.47%         4-10       18.37%         11-20       05.10%	Fashion couture	05.83%
Restaurant       01.94%         Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       ≤ 3         4-10       18.37%         11-20       05.10%	Cosmetics	04.85%
Communications       01.94%         Tourism       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       ≤ 3         ≤ 3       73.47%         4-10       18.37%         11-20       05.10%	Manufacturing	01.94%
Tourism       01.94%         Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       67.65%         Number of employees       32.35%         Number of employees       4-10         11-20       05.10%	Restaurant	01.94%
Misc.       05.83%         Years in operation       22.33%         4-10       23.30%         11-20       38.84%         21-60       15.53%         Ownership       67.65%         Partnership       32.35%         Number of employees       ≤ 3         ≤ 3       73.47%         4-10       18.37%         11-20       05.10%	Communications	01.94%
Years in operation       ≤ 3     22.33%       4-10     23.30%       11-20     38.84%       21-60     15.53%       Ownership       Sole Proprietorship     67.65%       Partnership     32.35%       Number of employees     ≤ 3       ≤ 3     73.47%       4-10     18.37%       11-20     05.10%	Tourism	01.94%
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Misc.	05.83%
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Years in operation	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	<u>≤</u> 3	22.33%
21-60     15.53%       Ownership     67.65%       Sole Proprietorship     32.35%       Number of employees     32.35%       ≤ 3     73.47%       4-10     18.37%       11-20     05.10%	4-10	23.30%
Ownership         Sole Proprietorship       67.65%         Partnership       32.35%         Number of employees           ≤ 3       73.47%         4-10       18.37%         11-20       05.10%	11-20	38.84%
Sole Proprietorship       67.65%         Partnership       32.35%         Number of employees       73.47%         4-10       18.37%         11-20       05.10%	21-60	15.53%
Partnership       32.35%         Number of employees <ul> <li>≤ 3</li> <li>4-10</li> <li>18.37%</li> <li>11-20</li> <li>05.10%</li> </ul> Partnership     32.35%         73.47%       18.37%         05.10%	Ownership	
Number of employees       ≤ 3     73.47%       4-10     18.37%       11-20     05.10%	Sole Proprietorship	67.65%
$\leq 3$ 73.47% 4-10 18.37% 11-20 05.10%	Partnership	32.35%
$\leq 3$ 73.47% 4-10 18.37% 11-20 05.10%	Number of employees	
4-10 18.37% 11-20 05.10%	<u>≤ 3</u>	73.47%
	4-10	
21-60 03.06%	11-20	05.10%
	21-60	03.06%

Table 3
MSMEs financial sources of capital (N=103)

	Percentage of Respondents
Profit time evolution since inception	
< 3 yrs	79.12%
3 – 5 yrs	10.99%
5 – 10 yrs	04.40%
More than 10 years	05.49%
Profitability trend (last 5 yrs)	
Low	27.45%
Stable	52.94%
High	19.61%
Bank account ownership	
Yes	60.78%
No	39.22%
Bank account ownership duration	
≤ 3 yrs	37.86%
4-10 yrs	20.39%
11-20 yrs	32.04%
21-60 yrs	09.71%
Financial ties with bank/other financial	institution
Non-existent	23.29%
Unsatisfactory	32.88%
Satisfactory	39.73%
Very satisfactory	04.11%
Loan application	
Yes	36.00%
No	64.00%
Financing sources of capital	
Personal funds	52.31%
Bank	20.00%
MFI (microfinance institution)	20.00%
Tontine	04.62%
Friends	01.54%
Other	01.54%
Financial loan amount requested (in mill	ions of F CFA)
0,2 - 3	55.00%
3,1 - 5	25.00%
5,1 – 10	15.00%
>10	05.00%
Funding request purpose	
Investment	75.86%
Operating expenses and cash flow	17.24%
Other	06.90%

# Table 3 (Continued) - (N=08) MSMEs financial sources of capital

	Percentage of Respondents
Loan refusal object	
Credit history	25.00%
Collateral	12.50%
Amount of personal capital contribution	12.50%
Other reasons	50.00%

These results showed that MSMEs faced the need for funding, regardless of the purpose. We pretend to find out what importance bootstrapping will have as a funding option.

After the sample descriptive analysis, we then focused on financial bootstrapping techniques used by the surveyed entrepreneurs (displayed in the fourth section of the questionnaire). First a variable cluster analysis was performed, allowing the grouping of financial bootstrapping methods into categories of likeness. The mean and standard deviation for each of the twenty one (21) evaluated bootstrapping techniques as well as the percentage responses for each of the five (5) categories of the Likert scale were determined (refer to Table 4). The values expressed in percentages were sorted in a declining order starting with the highest mean values down to the lowest (refer to Table 5).

It appeared that the bootstrap capital was obtained from a variety of sources. The most prevalent results were obtained by self-funded methods (personal funds (96%), the employment of relatives and friends (63%), withhold of the owner's salary when necessary (56%) and loans obtained from friends and relatives (52%)). Unsurprisingly, most respondents (mainly composed by retailers), offer discount to customers if they pay cash (62%), buy on consignment from suppliers (44%) and cease business with customers who pay late (37%).

Other sources of bootstrap financing newly introduced as finance alternatives specific to the Senegalese research setting (such as minimizing operational costs using social networks (43%), funding through tontines (33%) or rely on income from outside employment (referred as "khar matt" in wolof<sup>3</sup>) (25%)), significantly accounted as sources of funding for the surveyed MSMEs.

Figure 1 resumes the use of the main bootstrap techniques used by the Senegalese MSMEs surveyed.

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<sup>&</sup>lt;sup>3</sup> Wolof is the most spoken regional language in Senegal.

Table 4
Bootstrap techniques used by Senegalese entrepreneurs - descriptive statistics (N=103)

Description of bootstrap technique	Mean	Std. Err.	1	2	3	4	5	Total
Use Personal funds for Business Expenses	4.456311	.098317	4	3	5	21	70	103
Obtain Loans from Relative or Friends	2.553398	.1607427	49	4	12	20	18	103
Withhold Salary When Necessary	2.495146	.1510631	45	9	17	17	15	103
Rely on Income from Outside Employment (« khar matt »)	1.747573	.1411913	77	1	5	11	9	103
Run the Business Completely in the Home	1.252427	.0932915	93	1	3	2	4	103
Obtain funds from tontines	1.961165	.1542113	69	4	6	10	14	103
Employ Relatives/Friends	2.932039	.1735741	38	8	12	11	34	103
Buy on Consignment from Suppliers	2.184466	.1559454	58	4	15	12	14	103
Deliberately Delay Payment to Suppliers	1.718447	.1311966	70	3	15	11	4	103
Obtain Payment in Advance from Customers	1.834951	.1460809	62	5	18	12	6	103
Cease Business with Customers Who Pay Late	1.902913	.1692722	65	6	9	6	17	103
Offer Customers Discount for Cash Payment	2.582524	.1594323	39	2	26	24	12	103
Deliberately Choose Customers Who Pay Quickly	2.281553	.1714528	52	4	15	16	16	103
<b>Use Interest on Over Due Customer Accounts</b>	.9029126	.0624924	98	1	3	1	0	103
Buy Used or Borrowed Equipment Instead of New Equipment	1.446602	.1384751	76	5	9	7	6	103
Coordinate Purchases with Other Businesses	2.116505	.169152	64	1	7	15	16	103
Minimize operational costs using social networks	2.203883	.1605241	59	4	12	12	16	103
Share Office Space with Others	1.281553	.0919546	90	3	4	3	3	103
Share Equipment with Other Businesses	1.339806	.1019077	87	2	4	9	1	103
Share Employees with Other Businesses	1.621359	.1234973	78	2	8	11	4	103
Deliberately Delay Tax Payments	.3786408	.1014989	97	2	0	0	4	103

<u>Table 5</u> Bootstrap techniques used by Senegalese entrepreneurs – Percentage responses

BOOTSTRAP TECHNIQUES	% Use Method to Some Degree	% Never Use Method
<b>Use Personal funds for Business Expenses</b>	96%	4%
Employ Relatives/Friends	63%	37%
Offer Customers Discount for Cash Payment	62%	38%
Withhold Salary When Necessary	56%	44%
Obtain Loans from Relative or Friends	52%	48%
<b>Deliberately Choose Customers Who Pay Quickly</b>	50%	50%
Buy on Consignment from Suppliers	44%	56%
Minimize operational costs using social networks	43%	57%
Obtain Payment in Advance from Customers	40%	60%
<b>Coordinate Purchases with Other Businesses</b>	38%	62%
Cease Business with Customers Who Pay Late	37%	63%
Obtain funds from tontines	33%	67%
<b>Deliberately Delay Payment to Suppliers</b>	32%	68%
<b>Buy Used or Borrowed Equipment Instead of New</b>	1	
Equipment	26%	74%
Rely on Income from Outside Employment (« khar matt »)	25%	75%
Share Employees with Other Businesses	24%	76%
Share Equipment with Other Businesses	16%	84%
Share Office Space with Others	13%	87%
Run the Business Completely in the Home	10%	90%
Deliberately Delay Tax Payments	6%	94%
Use Interest on Over Due Customer Accounts	5%	95%

120% 100% 80% 60% 40% 20% Deliberate W Choose Customers who Pay. Cease Business with Customers who Pay. Use Personal funds for Business Expenses Offer Customers Discount for Cash Payment Obtain Payment in Advance from Customers Obtain Loans from Relative or Friends Minimize one ational costs using social. Withfold Salary When Necessary Buy on Consignment from Suppliers Coordinate Purchases with Other Businesses 0% % Never Use Method % Use Method to Some Degree

Figure 1
Use of bootstrap financing techniques by Senegalese MSMEs

The second part of our research question involved the testing of a set of hypotheses involving several socio-demographic and economical variables related to financial bootstrapping practice.

Hypotheses testing were conducted with analysis of variance (one-way ANOVA) and chi-square tests (Schinck and Sarkar (2012), Neeley and Van Auken (1998, 2009)). The results from the hypothesis testing conducted are summarized on the next section.

Most of the techniques failed to reject the hypothesis. Yet, the exceptions where the hypothesis was accepted were listed furthermore (the significant results are presented with a confidence interval of 95% (p-value < 0.05)).

H1: There is significant evidence of relationship between the use of bootstrap financing techniques and gender.

H2: Female Senegalese entrepreneurs tend to use more often bootstrap techniques than men.

Looking in detail at each of the bootstrap methods used, results displayed in Table 6 show that depending on the gender, entrepreneurs are more likely to hire among their relatives and friends (p=0.016). More precisely, we also found that Senegalese men are more likely to use this bootstrap technique than women (p = 0.0378). According to Neeley and Van Auken (2009), self-funded bootstrap methods were chosen with greater frequency by the group of male business owner-managers, while female owner-managers exploited more customer-based bootstrapping techniques. Regarding all other bootstrap techniques listed, there was not find any statistically significant relation.

H3: Entrepreneurs with higher levels of education tend to use more often financial bootstrapping methods then entrepreneurs with lower levels of education.

In Table 7, we found that higher utilization of financial bootstrapping methods exists among higher educated managers (secondary and university), specifically when entrepreneurs cease business with customers who pay late, minimize operational costs using social networks or deliberately delay tax payments (all results were statistically significant with p-value <0.05). Entrepreneurs with lower level of education (preschool and secondary) were more likely to employ among their relatives and friends. Unlike Neeley and Van Auken (2009), we can conclude that higher education levels of entrepreneurs use more efficiently creative techniques to raise funds, while lowly-educated respondents relied more on self-funded techniques.

H4: There is a dependent relation between legal status and the use of bootstrap techniques used by Senegalese entrepreneurs.

For the first time in this literature, we have tested the linkages between legal status and financial bootstrapping. As referred on Table 8, the results showed that formal and informal businesses frequently buy on consignment from suppliers and cease business with customers who pay late. Though, it appeared that respondents who managed formal businesses used more efficiently those bootstrap techniques (including tax delay payments) than informal business managers. Yet, this is the first work to demonstrate connection between informality and the practice of bootstrap.

*H5*: *Smaller enterprises tend to use more often financial bootstrapping methods* 

Table 9 illustrated the results achieved from the hypothesis testing. We found the use of bootstrapping methods with higher levels of utilization by larger firms as they deliberately delay their tax payments. However, no other statistically significant relation was found. The same research angle was studied by Harrison, Mason and Girling (2004) and Willoughby (2008). Yet, the authors found opposite results as small firms were more likely to use bootstrap financing techniques in order to overcome their financial needs.

<u>Table 6</u> Use of bootstrap financing techniques by gender

BOOTSTRAP TECHNIQUE	F - Ratio p-value Result			Test applied	
Obtain Loans from Relative or Friends	9.214	0.056*	Reject H1	Chi Test	
Employ Relatives/Friends	13.95	0.016**	Fail to Reject H1	Chi Test	
<b>Deliberately Delay Payment to Suppliers</b>	10.19	0.070*	Reject H1	Chi Test	
Buy Used or Borrowed Equipment Instead of New Equipment	9.419	0.094*	Reject H1	Chi Test	

Test applied: ANOVA							
Gender	Female	Male	p-value				
Employ Relatives/Friends	2.2	3.11	0.0378**				

<u>Table 7</u> Use of bootstrap financing techniques by academic level

BOOTSTRAP TECHNIQUES	F - Ratio	Prob	Result	Test applied
Withhold Salary When Necessary	2.16	0.097*	Reject H3	ANOVA
Employ Relatives/Friends	3.12	0.029**	Fail to Reject H3	ANOVA
Cease Business with Customers Who Pay Late	2.87	0.040**	Fail to Reject H3	ANOVA
Use Interest on Over Due Customer Accounts	2.16	0.097*	Reject H3	ANOVA
Buy Used or Borrowed Equipment Instead of New Equipment	2.40	0.072*	Reject H3	ANOVA
Coordinate Purchases with Other Businesses	2.52	0.062*	Reject H3	ANOVA
Minimize operational costs using social networks	6.89	0.000***	Fail to Reject H3	ANOVA
Deliberately Delay Tax Payments	6.83	0.000***	Fail to Reject H3	ANOVA

<b>Table 7 (Continued)</b>
Test annlied: ANOV

	Preschool	Elementary	Secondary	University	p-value
Employ Relatives/Friends	3.12	2.62	3.42	2.00	0.029**
Cease Business with Customers Who Pay Late	1.66	1.00	2.36	2.26	0.040**
Minimize operational costs using social networks	1.90	1.37	2.15	3.52	0.000***
<b>Deliberately Delay Tax Payments</b>	0.06	0.25	0.27	1.26	0.000***

Table 8
Use of bootstrap financing techniques by legal status

BOOTSTRAP TECHNIQUE	F -	Prob	Result	Test
	Ratio			applied
Buy on Consignment from Suppliers	22.841	0.000***	Fail to Reject H4	Chi Test
Cease Business with Customers Who Pay Late	17.926	0.000***	Fail to Reject H4	Chi Test
Minimize operational costs using social networks	9.9823	0.076*	Reject H4	Chi Test
<b>Deliberately Delay Tax Payments</b>	20.972	0.000***	Fail to Reject H4	Chi Test

Test applied - ANOVA							
	Informal	Formal	p-value				
Buy on Consignment from Suppliers	1.97	2.95	0.012**				
Cease Business with Customers Who Pay Late	1.57	3.25	0.000***				
<b>Deliberately Delay Tax Payments</b>	0.12	1.15	0.000***				

Table 9
Use of bootstrap financing techniques by size (number of employees)

BOOTSTRAP TECHNIQUE	F -	Prob	Result	Test
	Ratio			applied
Employ Relatives/Friends	1.70	0.060	Reject H5	ANOVA
Minimize operational costs using social	1.68	0.065	Reject H5	ANOVA
networks				
<b>Deliberately Delay Tax Payments</b>	6.88	0.000***	Fail to	ANOVA
			Reject H5	

Test applied - ANOVA								
	Number of employees (average values)							
	≤ 3	4-10	11-20	Over 20	p-value			
<b>Deliberately Delay Tax Payments</b>	0.8643	8.66	2.5	6	0.000			

# VI. Conclusion and Discussions

The ability of small businesses to impulse growth and stimulate job creation is limited by their ability to find adequate source of funding. Thereby, recent data from the Stein and Hommes (2013) indicate that the total unmet demand for credit by all formal and informal MSMEs (micro, small and medium enterprises) in developing economies today is estimated to be \$2.1 to \$2.6 trillion. Thus, a total of 45 to 55 percent of MSMEs in developing economies identify access to financial services as an operational constraint.

The aim of our research was to study the use of financial bootstrapping by the MSMEs in Senegal, as an alternative funding strategy. Using a sample of 103 MSMEs, the article first analyzed the strategies used and then, one a second hand, tested our hypotheses by using variables such as gender, level of education, legal status and size (by number of employees). Globally, the study corroborates previous work in some areas and sheds new light on others.

The business entrepreneurs surveyed in our sample were mostly composed by males (80.58%) and retailers (63.11%), with a secondary education level or lower. Most businesses were start-ups or in an expansion phase (with an average business age of 13.1 years old). Unexpectedly, only 60.78% of the respondents opened and used a bank account (as over 80% businesses were informal). A minority of bank account holders (36%) requested a loan, as the majority identified the high interest rates as their main barrier to access to credit and privileged funding through personal funds (52,31%) or tontines (4,62%).

With respect to the use of bootstrapping techniques, we found that the main bootstrap categories used by Senegalese entrepreneurs were orderly the followings: 1) self-funded methods, 2) minimization of accounts receivables, 3) minimization of capital invested and 4) delaying payments.

More precisely, we found that men are more likely to use self-funded methods such as hiring friends and relatives. The finding that higher educated managers used more optimally the financial bootstrap techniques, as compared to less-educated entrepreneurs, was expected. Unlike Neeley and Van Auken (2009), we found that

highly-educated respondents relied on the minimization of their accounts receivables and the capital invested, while less-educated managers privileged self-funded methods. We also found that, the more business managers were educated, the more they used social networks to minimize their operational costs (p=0.000).

Regarding the legal status, we found that both, formal and informal businesses, were using techniques such as buying on consignment from suppliers or ceasing businesses with customers who pay late. Yet, it appeared that formal businesses used more efficiently bootstrap techniques than informal businesses. In our sample, most respondents, independently of their academic level, the legal status or the size of their business, deliberately delayed their tax payments (p=0.000), therefore translating their indisposition to formality constraints. On the same trend, the results showed that larger businesses (by number of employees) are more likely to delay their tax payments than smaller ones (probably because they are more categorized as formal enterprises). Other results were not statistically significant.

As our results obtained have revealed interesting findings, we shall suggest the following recommendations. Firstly, Senegalese bootstrappers should rely more on self-funded techniques (such as obtaining loans from friends and relatives or employ below the market rate) as it will increase the level of savings and improve the profitability. Secondly, even though results reported to this method were not significant, the joint utilization of spaces, machinery and equipment, or human resources should be an alternative that will improve the efficiency of the employment of resources. Thirdly, MSMEs should use their customers more extensively by using routines to minimize account receivables and collect cash flow quickly, or by negotiating the best terms with their suppliers (i.e buying on consignment, use leasing or borrowed equipment, etc.). Fourthly, small business owners should focus on minimizing the capital invested by using unexpansive alternatives such as the use of social networks to improve branding and revenues.

At last, our findings strengthen the clear difference between businesses, as micro, small and large enterprises, depending on their characteristics, have different financial needs and can follow different strategies to achieve.

As highlighted by Schinck and Sarkar (2012), it is worthwhile to note the possible influence of cultural, economic and social factors in a country context when studying bootstrapping techniques. Numerous scholars have argued about the importance of taking environmental and entrepreneurial characteristics into account to more fully understand finance decisions in start-up businesses.

With regards to the West African context, and specifically for the country case of Senegal, our study found that MSMEs significantly rely on bootstrapping methods. This statement is sustainable knowing that the current outstanding credit served by banks in the Senegalese economy is only estimated at 34.2%, which is low compared to countries such as Morocco or South Africa (estimated over 60%)<sup>4</sup>. According to Beck *et al.* (2008), banks in developing economies choose to be less exposed to SMEs, as they are unable to gauge the creditworthiness of MSMEs and thus ask for higher interest rates and collateral requirements. The strategy adopted by financial institutions is mainly due to informational asymmetries, informality and low revenue per client. Therefore, lack of traditional signals (such as financial historical data or sales) means potential lenders and investors may not have information conveying the health of the SME ((Djupdal &

<sup>&</sup>lt;sup>4</sup> « Sénégal : la part des banques est encore très insuffisante », Data surveys ESUP 2011 and ESUP 2015 conducted by Observatoire de la qualité des services financiers, (OQSF), *Journal de l'Economie Sénégalaise*, January 2018.

Westhead, 2013; Saparito et al., 2013). This minimizes the ability of the entrepreneur to attain outside capital.

Unfortunately, the use of alternative sources of financing such as bootstrapping by MSMEs remains arguably unknown in Senegal due to the fact that limited investigation have been done in this area. This study contributes to the identification and critical evaluation of the financial bootstrapping methods used by Senegalese entrepreneurs. Authors should research more about alternative business financing sources to educate entrepreneurs with regard to these concepts. Besides, greater progressions are needed to collect higher quality statistical information about the MSMEs operating in the West African regions, especially the ones operating in the informal segment.

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