LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTER'S FINAL WORK

DISSERTATION

START-UP'S FINANCIAL CAPITAL AND THE PROBABILITY OF BEING ACCEPTED INTO AN ACCELERATOR PROGRAM

JOÃO MARIA APOLINÁRIO JORGE

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ABSTRACT

The aim of this dissertation is to evaluate the impact of the capital structure of a start-up on the probability of being accepted into an accelerator program. Due the fact that it is a recent topic, there is a lack of research on the preferences of accelerator's directors in terms of the financing structure of start-ups. After building a sample of firms which applied to accelerators between 2016 and 2017, from a novel database provided by the Emory University in Atlanta, United States of America, we conducted Tobit and Probit analyses to assess the relationship between the capital structure of a start-up and the probability of being accepted in an accelerator program. Our results suggest that start-ups with higher levels of own equity, external equity and debt have higher chances of being accepted in accelerators. In terms of sources of funding, accelerator's directors prefer start-ups with higher proportion of external equity in their capital structure.

KEYWORDS: Accelerators; Start-ups; Entrepreneurial Finance; Capital Structure; Accelerators' Selection Process.

JEL CODES: G32; L26; M13.

RESUMO

O objetivo desta dissertação é avaliar o impacto da estrutura de capital de uma start-up na probabilidade de esta ser aceite em programas de aceleração de empresas. Em virtude de se tratar de um tema recente, não existe literatura anterior sobre as preferências dos responsáveis pelos programas de aceleração relativamente à estrutura de financiamento das start-ups. Depois de selecionada uma amostra de empresas que se candidataram a aceleradoras entre 2016 e 2017, de uma base de dados fornecida pela Universidade Emory em Atlanta, Estados Unidos da América, utilizamos modelos de Tobit e Probit para avaliar a relação existente entre a estrutura de capital de uma empresa e a probabilidade de esta ser aceite em aceleradoras. Os resultados sugerem que start-ups com níveis mais altos de capitais dos fundadores, capitais próprios externos e dívida, têm maior probabilidade ser aceites em aceleradoras. Analisando as proporções relativas de cada fonte de financiamento, as aceleradoras preferem start-ups cuja maioria do capital seja proveniente de capitais próprios externos.

Palavras-chave: Acceleradoras; Start-ups; Empreendedorismo Financeiro; Estrutura de Capitais; Processo de Seleção de Acceleradoras.

Classificação JEL: G32; L26; M13.

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LIST OF ABBREVIATIONS

LPM: Linear Probability Model

NPV: Net Present Value

ROI: Return on Investment

OLS: Ordinary Least Squares

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1. INTRODUCTION

The importance of start-up's initial financial capital is well established in the previous literature. Financial support has an important role in the entrepreneurial activities (Pan and Yang, 2018). In fact, the financial capital determines start-up's size (Brüderl et al., 1992), growth (Cooper et al., 1994; Colombo and Grilli, 2005), and survival.[1] Ventures with greater financial resources can overcome temporary hardships or managerial mistakes more easily. Financial capital allows firms to increase their legitimacy among stockholders, acquire better resources and technology, and start operation at a larger scale. The choice of funding (e.g. own equity, outside equity or debt) may also signal its value to investors and other external entities, reducing information asymmetries and agency problems (Ross, 1977; Tomboc, 2013). The capital structure not only signals the real value of a start-up, but also the growing perspectives, new profitable projects, the level of commitment of the entrepreneurs with the start-up and financial distress costs (Brealey, Leland and Pyle, 1977; Cassar, 2004; Greenwald, Stiglitz and Weiss, 1984; Myers, 2001). But, does the amount of financial capital also influence the probability of being accepted into start-up accelerators?

Start-up accelerators, also known as seed accelerator programs, are educational programs of limited duration created to support start-ups[2] in their early stages of life. In these programs, established firms and experienced entrepreneurs assist new entrepreneurs by providing funding, business advice, mentorship and networking connections (Cohen, 2013). Although they share some characteristics of business incubators, accelerators differ in terms of duration, business model, start-up's selection process and education provided (Isabelle, 2013).[3] Their exhaustive selection process implies that only a few start-ups are accepted (Caley and Kula, 2013). Previous studies find that the selection decision is determined by entrepreneur's motivations, objectives, academic background, previous entrepreneurial and working experience and start-up's growth potential,

[1] Bates (1990); Brüderl et al., (1992); Cooper et al., (1994); Astebro and Bernhardt (2003); Headd (2003); Hvide and Moen (2008).

[2] In this study, we define start-ups as nascent firms aimed to develop new opportunities to the market and launch innovative products and services, in an environment of uncertainty (Hoffman and Radojevich-Kelley, 2012).

[3] For detailed information on business incubators, please see Grimaldi and Grandi (2005).

intellectual property and size (Yin and Luo, 2018). Until now, to the best of our knowledge, little is known about start-up's financial capital and accelerator's selection process.

In our study, we contribute to this literature by assessing the importance of the capital structure of a start-up in the selection process of an accelerator. More specifically, we examine the relationship between the proportion of entrepreneurs' own capital, outside equity and debt in the capital structure of start-ups and their acceptance rate into an accelerator. Our research questions are the following: Does the amount of financial capital raised by a start-up affect the probability of being accepted into an accelerator program? Which source of funding will increase their chances of being accepted?

To address these questions, we use a novel database, the *Entrepreneurship Database Program*, from Emory University in Atlanta. From this database, we select all for-profit start-ups that applied to accelerator programs between 2016 and 2017, in which we have information about the start-up's capital structure and characteristics of the founding team.

We find that the amount of financial capital positively affects the probability of a start-up being accepted into an accelerator. However, when comparing the sources of funding, we find that accelerators prefer start-ups with higher proportion of external capital, in detriment of own equity and debt.

This study has important practical implications. For entrepreneurs who intend to apply for such programs, this study suggest that their chances of being accepted increase when they raise external equity. For public policy, this study suggests that the governments should create mechanisms to support those applying start-ups, such as credit lines for new entrepreneurs, subsidies and fiscal incentives for accelerator's founders.

This dissertation is structured as follows: section II reviews the relevant literature on accelerators and entrepreneurial finance; section III presents our theory and hypotheses to be tested; section IV describes the data, sample and the relevant variables; in section V we describe the empirical methodology and present the results; finally, section VI concludes.

2. Literature Review

Since accelerators are a relatively recent phenomenon, only a few studies have analysed the role of accelerators and their main characteristics (Cohen and Hochberg, 2014). In this section, we review the most relevant studies, concerning accelerators by differentiating them from business incubators and by defining its main benefits and disadvantages.

2.1. Main Characteristics of Accelerators

As previously mentioned, accelerators are educational programs of limited duration with the objective of assisting early stage firms establishing successfully in the market (Cohen, 2013) (Shankar and Shepherd, 2018)[4]. These programs are created by private investors, who intend to profit while helping start-ups to develop their new business ideas (Malek, Maine and McCarthy, 2013). The duration of program varies between three to six months, since most of the accepted start-ups are technology based. Hoffman and Radojevich-kelley (2012) finds that accelerators usually invest in technology-based start-ups with cut edge technology and products with international appeal. The programs operate in cohorts of start-ups, which allows the entrepreneurs to share knowledge and previous business experiences with other founders.

To apply to accelerators, start-ups must go through a very competitive selection process, in which the accelerator's directors interview the entrepreneurs to evaluate the business idea, the background of the start-ups and of their founders, as well as founder's motivations and start-up's growth potential (Miller and Bound, 2011). At the firm level, they also assess if the product or service is innovative, the market in which the firm will operate, the existence of patents and trademarks, the willingness of the customers to acquire the product or service and the growth potential of the firm and its sustainability (Yin and Luo, 2018). Once the start-ups are accepted, the accelerator's directors invest capital in each start-up, also known as *pre-seed investment*. Accelerators prefer to invest in start-ups formed by teams instead of a single entrepreneur, nevertheless, each team

[4] Accelerators help start-ups in the stage, where they most frequently fail (Battistella, Toni and Pessot, 2016).

usually does not have more than four elements (Miller and Bound, 2011). At the end of the program, there is a demo-day, for entrepreneurs to introduce their start-up and present their business idea to potential investors (Miller and Bound, 2011; Clarysse, Wright and Hove, 2015).

Some studies compare accelerators with business incubators, in the sense that they help new ventures in their early stage and allow the program participants to connect with a network of investors (Malek, Maine and McCarthy, 2013). However, there are some differences between them. First, they differ in terms of duration. Accelerators usually last between three to six months while incubators vary from one to five years. The business model of accelerators consists on an investment provided by the accelerator's director, which expect to profit from it, while the business model of incubators is based on office renting paid by the entrepreneurs. The selection process of accelerators is very competitive, unlike the selection process of incubators (Cohen and Hochberg, 2014). The type of education offered is also different. In accelerators, there are regular seminars where entrepreneurs learn core concepts about business such as finance, management and marketing. In contrast, incubators only provide some legal information punctually (Isabelle, 2013; Cohen and Hochberg, 2014).

2.2. Benefits and Disadvantages of Accelerators

Accelerators create a propitious environment for the entrepreneurs to develop their business ideas and to focus on innovation, while accelerators manage business related issues, such as financing, management and networking (Sharma, Joshi, Shukla, 2014). The main advantages of accelerators are funding, business advice, mentorship and networking connections and credibility (Cohen, 2013).

Accelerators first appeared to overcome the financial capital's needs of start-ups (Hoffman and Radojevich-Kelley, 2012). In fact, Christiansen (2009) and Miller and Bound (2011) consider that access to financial capital is the most appealing benefit of accelerators, since the capital provided in these programs is fundamental for the development of the start-ups. In fact, following the financial crisis, accelerators became an important source of funding for new entrepreneurs. In contrast, bank's regulation became stronger and credit concession for new start-ups became more restricted (Block,

Colombo, Cumming and Vismara, 2017). Accelerator's unique networks also positively contribute for subsequent funding after the boot-camp ends (Christiansen, 2009; Miller and Bound, 2011).

The mentorship that entrepreneurs receive in accelerators allows them to learn from past experiences of the mentors, avoid making the same mistakes and focus on the main issues of the project (Clarysse and Yusubova, 2014; Mejia and Gopal, 2015). The mentor's experience allows them to find the strengths and weaknesses of the participating start-ups, to advise them about the most accurate strategies, opportunities and business plans to follow (Wise, Valliere, 2014).

Accelerators have an important role on reducing the asymmetric information problem since accelerator's directors evaluate the participating start-ups during the selection process and have an accurate perception about the potential and fair value of the firms accelerated (Kim and Wagman, 2011). Thus, participating in an accelerator gives a signal to the market that the start-up is worth investing, reducing the gap of information about the true value and potential of the entrepreneurial firm between investors and entrepreneurs.

Accelerators bring advantages not only for start-ups and entrepreneurs, but also for accelerator's directors (Hoffman and Radojevich-Kelley, 2012). Accelerator's directors have interest in the success of the start-ups that participate in the programs, since they receive equity in exchange for capital (Christiansen, 2009). In the case of technology accelerators, participating start-ups may also use the technology provided by the accelerators (Miller and Bound, 2011). Accelerator's directors have also strategic objectives when they host accelerators (Kanbach and Stubner, 2016). The directors might integrate the start-ups, which get improved after participating in their programs. Supporting start-ups is a good vehicle for large and already established firms to get involved in innovation projects and have access to the ultimate market trends, technologies and innovation (Christiansen, 2009; Kanbach and Stubner, 2016).

Despite their benefits, accelerators also present a few problems (Miller and Bound, 2011). Accelerators usually target entrepreneurs who aim to sell their start-ups. Therefore, accelerators become restricted to a number of start-ups and exclude entrepreneurs who desire to develop their start-ups on an ongoing basis. The limited duration of accelerators

is also an issue. The period of the program may be insufficient for the entrepreneurs to develop their business idea and to build their business (Chang, 2013). At the end of the program, start-ups are relatively recent and may not be sufficiently mature and the entrepreneurs might not be prepared to run the business (Miller and Bound, 2011). Moreover, Miller and Bound (2011) add that the amount of equity received by the accelerator's directors may not be fair according to their contribution and effectiveness of accelerators program. Entrepreneurs must compare the costs of forgoing equity, such as, dispersion of the shareholders' structure and loss of control in the firm, with the advantages and benefits inherent to accelerators (Chang, 2013). This is particularly relevant, for accelerators with weaker reputation (Wright, 2017). In terms of mentoring, accelerators usually copy what other accelerators do and consequently, fail to understand the needs and singularities of each participating start-up and entrepreneur (Hathaway, 2016).

3. THEORY AND HYPOTHESES

In this section, we develop the hypotheses on the impact of the start-up's financing structure in the accelerator's selection process. We are interested in studying the influence that founders' own equity, outside equity and debt have on the acceptance rate of accelerator programs.

Tables 1 and 2 present the most relevant theories about the signalling effects of the financing structure. The financing sources available to a start-up are debt and equity (Berk and DeMarzo, 2010). While equity is a permanent source of capital, which represent the investment made by the owners, debt is the capital loaned by other parties and eventually it will be repaid (Coleman and Robb, 2012). Initially, founders fund their start-ups with equity financing, investing their own savings and their relatives' capital and subsequently seek for outside investors such as angel investors and venture capitalists. In terms of external capital, start-ups raise, firstly, funds from angel investors and only in a subsequent stage obtain funds from venture capitalists, which, usually, provide larger amounts of capital (Wong et al., 2009). As the start-up evolves to a greater dimension, with a more complex structure of shareholders and a higher level of reputation, it will search for debt financing (Cosh, Cumming and Hughes, 2009). The capital structure of the start-ups includes the combination of these several sources of funding (Myers, 2010) and, it depends on start-up's size, asset structure, legal organization, owners' characteristics and growth perspectives (Cassar, 2004; Kurshev and Strebulaev, 2007; Fraser, Bhaumik and Wright, 2015).[5]

The lack of assets that can be used as collateral, the scarce years of operations and uncertainty about future profitability prevent start-ups from raising debt, therefore, they often prefer to raise equity financing (Denis, 2004). Start-ups face the agency and information asymmetries problems. The information asymmetries problem arises because start-up's founders possess a wider knowledge about the potential of their business and a better understanding of its quality than outside investors. In fact, investors are unable to make an accurate assessment of the firm and reach an agreement with the entrepreneurs

[5] The pecking order and the life cycle theory contributes to explain the financing decision (Fraser, Bhaumik and Wright, 2015). The pecking order theory suggest that start-ups choose internal funds first, once it is less expensive, and then seek external sources such as equity and debt. It also says that profitable firms tend to use more internal funds because their owners shall be interested in investing in the firm (Myers and Majluf, 1984).

about the firm's value (Tomboc, 2013). When firms incur in external financing, a conflict of interests arise, in the sense that the founder may use such funds on his own benefit, contrary to the investor's objectives. This is known in the literature as the agency problem (Denis, 2004).

Founder's choice for the capital structure of a start-up may mitigate these problems (Ross, 1977). The founders have better information about the true value of the start-up, and when they invest their own capital in the start-up, they are expecting higher future cash flows than the current firm value. This information signals that the start-up is worth investing, reducing the problem of information asymmetries (Brealey, Leland and Pyle, 1977). When entrepreneurs own a high share of the start-up, they are more committed to make the firm grow and prosper (Ahlers, Cumming, Gunther and Schweizer, 2015). On the other hand, founder's own capital may serve as a signal to the market, reflecting the commitment of the founding team and the quality of the business idea. In fact, higher proportion of founder's own capital indicates that the firm is more profitable and is expected to generate higher cash flows (Vermaelen, 1981). We apply the same argument to the accelerator director's selection decision. When they are evaluating start-ups, they may look at the share of own equity as a signal information about the business quality. Entrepreneurs of higher quality will usually invest more of their own money (Brealey, Leland and Pyle, 1977). Moreover, ventures with larger own capital will have larger resources to use as collateral to secure external funding (Berger and Udell, 1998). Therefore, we assume:

Hypothesis 1: Start-ups with higher share of own equity in the capital structure will have higher chances of being accepted into an accelerator.

Previous literature is not unanimous relatively to the signalling effect of outside equity. In one hand, issuing outside financing indicates that the firm is growing and needs more capital to finance its projects (Cassar, Holmes, 2003; Asquith Mullins, 1986). More dynamic start-ups, with higher growth potential, more credibility and in more advanced stages of their life-cycle, tend to incur in more external financing (Fraser, Bhaumik and Wright, 2015). Larger start-ups are less likely to fail, since they generate more cash flows

than smaller firms. Also, the size of a start-up affects its financing structure due the economies of scale in lowering asymmetric information, transaction costs, market access and risk exposure (Cassar, 2004). Furthermore, firms that raised external capital had to go already through a selection and monitoring process from outside investors. Due to their competitive and highly selective process, only few firms raise external equity (Fluck, 1998).

On the other hand, outside equity may represent a negative signal due the loss of incentives from the management team (the initial owners of the start-up) to maximize the activities, operations and profits of the firm. When managers do not own the full capital of the firm, they have less incentive to maximize the interests of the company. However, external capital entities implement several mechanisms to align founder's and venture's interest (Jensen and Meckling, 1976). Moreover, it may also indicate the firm is overpriced (Asquith Mullins, 1986), which implies that the founder intends to sell the start-up at a higher price than its net present value (NPV) (Jensen and Meckling, 1976; Greenwald, Stiglitz and Weiss, 1984). Nevertheless, considering the reputation and monitoring process of external equity entities, accelerator's director will probably take more into consideration the positive signals. Therefore, we expect:

Hypothesis 2: Start-ups with higher share of external equity in the capital structure will have higher chances of being accepted into an accelerator.

When start-ups raise debt, they are already in a later stage of their firm's life cycle and the accelerator program are fitted to early stage ventures, when they are still testing their business models. When start-ups incur in debt funding, they must go through a process of risk analysis and regular scrutiny to ensure that firm's activities are regularly supervised (Ross, 1977). Besides, growing start-ups need more leverage to finance its operations, which is positive and means that the firm has growing perspectives (Berger and Udell, 1998). Another benefit inherent to debt financing is the tax shields firms obtain, since the interest expenses paid, reduce the amount of profits subject to taxes, decreasing the tax value the firms owe (Myers, 2001). However, debt is also associated to higher financial distress costs (Myers, 2001). The author argues that the higher the

value of debt in the financing structure of a firm, the higher the costs of bankruptcy, and consequently the higher the agency costs. All of this may have a negative impact when accelerators directors are evaluating the applying start-ups.

Hypothesis 3: Start-ups with higher share of debt in their capital structure have lower probability of being accepted into an accelerator.

4. DATA AND DESCRIPTIVE STATISTICS

4.1. Data

Our data comes from a novel database, the Entrepreneurship Database Program from Emory University in Atlanta, United States of America. The Entrepreneurship Database Program records information on the entrepreneurs who applied to several accelerator programs. These entrepreneurs respond every six months to a questionnaire to update their information. The database includes information on start-up applicants between 2013 and 2017, surveying more than 13,495 early-stage ventures and 175 accelerator programs. This dataset surveys accepted and rejected start-ups from 150 countries worldwide and it has information at the firm and founders' level.

At the firm level, the survey includes information on the start-up's country of headquarters, number of founders, number of employees, presence in social media and webpage, year of foundation, legal status, innovation (copyrights, patents and trademarks), revenues, if the start-up was previously accelerated and the sources of financing (own capital, equity, debt and philanthropic). At the entrepreneurs' level, the survey includes age, gender, education degree, entrepreneurial experience and job experience.

4.2. Sample

From Entrepreneurship Database Program database, we select all for-profit start-ups which applied to an accelerator program between 2016 and 2017. The database only disclosures information on the acceptance of the firm in the accelerator program since 2016. Then, we exclude start-ups with missing information on start-up's and founder's characteristics and we restricted our sample to the start-ups established by founders aged between 20 and 70 years old. We end up with a sample of 3,649 start-up observations, with information of 8,228 founders.

4.3. Variables and Descriptive Statistics

Table 3 describes the variables used in this study and Tables 4 and 5 present the descriptive statistics of our sample.

The majority of the start-ups in our sample are accepted into an accelerator program. Approximately 80 percent of the start-ups are accepted. Relatively to start-up's characteristics, each start-up has, on average, 3 founders, 33 employees and a value of revenues of approximately 292,913$. In terms of capital structure, own equity, external equity and a debt account for 23 percent, 55 percent and 22 percent, respectively. Furthermore, 89 percent have a website and/or social media, 53 percent possess intellectual property and 37 percent were previously accelerated. In terms of founder's characteristics, entrepreneurs, on average, are male (72 percent) and have 35.6 years of age. In terms of experience, 67 percent of the start-ups in our sample have, at least, one founder with entrepreneurial experience and 92 percent with working experience. Relatively to education degree, 91 percent have, at least, one founder with a Bachelor, Master or Doctoral degree and only 9 percent of the start-ups have founders with the high school or vocational degree.

5. EMPIRICAL METHODOLOGY AND RESULTS

In this section, we evaluate the impact of the levels of capital and the financing structure on the accelerator's selection process. In order to test the effect of the amount of own equity, outside equity and debt in the probability of a start-up being accepted into an accelerator, we conduct a Logit and a Probit model by estimating equation (1). To assess which source of funding increases the chance of start-up being accepted we estimate equations (2) and (3):

$$Accepted_{s,f} = \alpha + \beta X_s^{'} + \theta Z_f^{'} + \delta_1 \ln(ownequity) + \delta_2 \ln(extequity) + \delta_3 \ln(debt) + \varepsilon_{s,f} \quad (1)$$

$$Accepted_{s,f} = \alpha + \beta X_s^{'} + \theta Z_f^{'} + \delta_1 externalequitypercent + \delta_2 debtpercent + \varepsilon_{s,f} \quad (2)$$

$$Accepted_{s,f} = \alpha + \beta X_s^{'} + \theta Z_f^{'} + \delta_1\, externalequitypercent + \delta_2 ownequitypercent + \varepsilon_{s,f} \quad (3)$$

Where *s* is the applying start-up and *f* refers to the founder.

Our dependent variable is *accepted*, a dummy variable, equalling one if a start-up is accepted in an accelerator program and zero otherwise.

The variables of interest in our model are *lntotalownequity*, calculated as the natural logarithm of the total own equity; *lntotalexternalequity*, computed as the natural logarithm of the total external equity; *lntotaldebt*, calculated as the natural logarithm of the total debt; *ownequitypercent*, computed as the ratio between the total value of own equity and the total assets; *externalequitypercent*, calculated as the ratio between the total amount of external equity and the total assets; and *debtpercent*, computed as the ratio of total debt over total assets.

As suggested by the previous literature, we include the most relevant factors that influence the acceptance rate of the accelerator's directors. The vector of firm's characteristics, $X_s^{'}$ includes: *size* measured by the natural logarithm of the number of employees; *lnrev* measured by the logarithm of the total revenues of the previous year; the number of founders; *intproperty* (dummy variable equalling one if the firm has patents, trademarks and/or copyrights and zero otherwise); *websitesocialmedia* (dummy variable equalling one if the start-up has facebook/tweeter/linkedin and/or website, and zero otherwise); *lnnrfounders* measured as the natural logarithm of the total number of founders of each start-up; *lnagestartup* computed as the natural logarithm of the number of years of activity of the start-up; *prevaccelerated* (dummy variable equalling one if the start-up has been accelerated before and zero otherwise*)* and four categorical variables for profitability: *profitability_dum1* (dummy variable equalling one if the profitability is between 0 percent and 5 percent and zero otherwise), *profitability_dum2* (dummy variable equalling one if the profitability is between 6 percent and 10percent and zero otherwise*), profitability_dum3* (dummy variable equalling one if the profitability is between 11 percent and 15 percent and zero otherwise), *profitability_dum4* (dummy variable equalling one if the profitability is between 16 percent and 20 percent and zero otherwise), *profitability_dum5* (dummy variable equalling one if the profitability is higher than 20 percent and zero otherwise*); profitability_dum6* (taking the value one if the start-up had a negative ROI and zero otherwise).

The founder characteristics vector, $Z_f^{'}$, includes the following variables: *lnmale* (natural logarithm of the number of male founders); *entrepexper* (dummy variable equalling 1 if, at least, one founder per start-up has entrepreneurial experience and 0 otherwise); *jobexper* (dummy variable equalling one if, at least, one founder has working experience and zero otherwise); and education level measured with three categorical variables*: higheducation* (dummy variable equalling one when start-ups reported, at least one founder with bachelor, master or doctoral degree and zero otherwise), *mediumeducation* (dummy variable assuming the value one for start-ups which reported that the highest education level completed by their founders is high school or vocational degree and zero otherwise) and *loweducation* (dummy variable equalling one for start-ups in which founders have not completed a degree higher than elementary, middle or primary school and zero otherwise).

We include fixed effects at the accelerator program, country, and sector of activity. Standard errors are clustered at the accelerator program level.

Table 6 presents the results of the estimated regression (1) using the Logit and Probit models.

The Logit estimates suggest a positive effect of the total amount of own equity of a start-up and its acceptance rate in an accelerator program. An increase of the amount of own equity leads to an increase, *ceteris paribus*, in the probability of the start-up being accepted in an accelerator. This result confirms the arguments that in firms with higher levels of own equity, entrepreneurs are more committed with the start-up (Ahlers, Cummings, Gunther and Schweizer, 2015), own equity is a positive signal about the quality of the firm (Leland and Pyle, 1977) and firms with more own equity possess more resources to use as collateral (Berger and Udell, 1998). Relatively to the amount of outside equity, there seems to have, as well, a positive relationship with the probability of the start-up being accepted into accelerators. According to our results, an increase in the amount of total outside equity corresponds to an increase, *ceteris paribus*, in the probability of being accepted. This is according to the theory that start-ups with higher amounts of external equity correspond to growing start-ups needing more capital to develop their projects (Cassar and Holmes, 2003) and more outside equity is associated to larger start-ups, benefiting from economies of scale, less asymmetric information, lower transaction costs and easier access to markets (Cassar, 2004). The total amount of debt has a positive impact in the probability of a start-up being accepted into an accelerator program. An increase in the total amount of debt leads to an increase, *ceteris paribus*, in the chances of the start-up to be accepted. These results corroborate that firms which incur in debt financing are subject to a process of risk analysis and regular scrutiny (Ross, 1977), firms which need to be leveraged have growing perspectives (Berger and Udell, 1998) and benefits of tax shields associated to higher levels of debt (Myers, 2001).

The results we obtained with the Probit model confirm the results we described previously. The total amount of own equity, external equity and debt have a positive effect in the probability of a start-up being accepted in an accelerator program.

Table 7 presents the results of the estimated regressions (2) and (3), using the Logit model.

The estimates from equation (2) suggest a positive relationship between the share of external equity and the chances of a start-up being accepted into an accelerator program. An increase of the share of external equity is associated to an increase, *ceteris paribus*, in the probability of the start-up being accepted. This result is according with the theory that firms which raised outside equity have already passed through a monitoring and assessment process from outside investors (Fluck, 1998), and for that reason are more appealing for accelerators' directors. On the other hand, higher amounts of debt have a negative impact on the acceptance rate of start-ups, but it is not statistically significant. An increase of the share of debt in the capital structure corresponds to a decrease, *ceteris paribus*, in the probability of the start-up to be accepted into accelerators. This confirms that higher levels of debt are associated to financial distress costs and firms with more debt are subject to higher bankruptcy costs and agency costs (Myers, 2001).

The results from regression (3), confirm the positive relationship between the share of outside equity and the chances of a start-up to be accepted in accelerators that we achieved with regression (2). According to the results obtained in regression (3) an increase of the share of outside equity leads to an increase, *ceteris paribus*, in the probability of the start-up to be accepted into an accelerator program. Relatively to the effect of the share of own equity in acceptance rate of a start-up in accelerators, the results from equation (3) suggest that start-ups with higher share of own equity in their capital structure tend to have lower acceptance rates in accelerator programs. A start-up with more own equity share has less probability, *ceteris paribus*, of being accepted in an accelerator program. These results indicate that despite the positive signals associated to higher levels of own equity, described above, the assessment process that start-ups are subject when issue outside equity and the reputation of external entities have a greater impact in the selection process.

Table 8 presents the results of the estimated regressions (2) and (3), using the Probit model.

The results we obtained using the Probit model confirm the results we described previously. Start-ups with higher share of outside equity tend to have higher chances of being accepted into accelerator programs than start-ups with higher share of own equity or debt.

Considering the results described above, we tend to reject our hypothesis 1, since start-ups with higher share of own capital seem to have lower chances of being accepted into accelerator programs. We do not reject our hypothesis 2, since start-ups with higher share of external equity tend to have higher rates of acceptance in accelerators. Start-ups with higher share of debt seem to have lower probabilities of being accepted into an accelerator program, thus we tend to reject our hypothesis 3.

We are able then to answer to our research questions. In the first place, the amount of financial capital raised by a start-up affects the probability of being accepted into an accelerator program, confirmed by our results from regression (1). Moreover, external equity is the source of financing which increases the chances of a start-up to be accepted into an accelerator, according to the results we achieved in regressions (2) and (3).

6. CONCLUSION

The aim of this research is to study the relationship between the financing structure of a start-up and the probability of being accepted in an accelerator program. Thus, we selected a sample based on novel database provided by the Emory University in Atlanta, United States of America, containing information of start-ups which have applied to accelerator programs between 2016 and 2017.

Then we performed a multiple regression analysis, using Logit and Probit models, in order to estimate, firstly, the impact of the total amount of own equity, external equity and debt on the probability of a start-up being accepted in accelerators, and then to assess which source of funding increases its chance of being accepted.

The results we achieved lead us to conclude that there is a positive relationship between the total amount of own equity, external equity and debt and the probability of a start-up being accepted into accelerators, which means that the amount of financial capital raised by a start-up affects the probability of being accepted. However, when we studied the impact of the proportion of own equity, external equity and debt, we conclude that start-ups with higher share of external capital tend to be preferred by accelerators' directors, comparing to start-ups with higher share of own equity or debt. With these results we also conclude that accelerators' directors prefer start-ups with higher levels of capital, and firms with larger share of external equity in their capital structure, in detriment of start-ups with higher share of own equity or debt.

This study intends to fulfil a gap in the existent literature and is a contribute to the literature about entrepreneurial finance and is particularly relevant for start-ups which intend to apply to accelerator programs. Our research indicates that entrepreneurs should raise external equity before applying to accelerators in terms of economic policy. It is also relevant in terms of economic policy, in the sense that it suggests that Governments should create mechanisms to assist applying start-ups, such as fiscal benefits and subsidies for accelerators' founders and credit lines for new entrepreneurs.

This study has, however, some limitations that is important to take in consideration. Our research is based on a sample of start-ups that may not be fully representative in

terms of the characteristics we want to study, which may compromise the statistical significance of our results, as well as the fact that accelerators are a quite recent phenomenon, with few records of information about start-ups and entrepreneurs that applied to accelerators which lead us to exclude a few start-ups, and only considering start-ups which applied form 2016 onwards.

For future research, it would be interesting to have a depth study about other factors that influence the selection process of start-ups in accelerator programs, as well as more studies on the relationship between the capital structure of a start-up and the accelerator selection process, upgrading the available information about start-ups and entrepreneurs that applied to accelerator programs.

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TABLES

Table 1- Signalling Effects of Capital Structure: Theoretical Approaches

Author	Topic Paper	Type of Analysis	Main Conclusions
Asquith, Mullins (1986).	Signalling with dividends, stock repurchases and equity issues.	Analysis of the impact of equity issues on stock prices. Calculation of abnormal returns and cumulative average returns.	Not defined (positive and negative effects).
Bergen, Udell (1998).	The role of private equity and debt markets in the financial growth cycle.	Analysis of existing literature on private equity and debt markets.	Positive effect.
Myers (2001).	Capital structure.	Analysis of the Pecking Order theory.	Mixed effects, but mainly negative effects of financial distress costs of high levels of debt.

Table 2- Signalling Effects of Capital Structure: Empirical Evidence

Name (Paper)	Region / country	Period	Methodology	Dependent Variable	Independent Variable	Conclusions
Ahlers, Cumming, Gunther, Schweizer (2015)	Australia	2006 - 2011	Univariate: mean differences Multivariate: OLS	Fully funded; Nr. Investors; Funding amount; Speed of investment.	Equity share	Positive impact
Vermaelen (1981)	E.U.A.	1962 - 1977	Computation of abnormal returns	ASFE; CASFE; (standardized earnings per share forecasted errors)	Repurchased shares	Positive impact
Cassar (2004)	Australia	1996 - 1998	Multivariate: OLS, Tobit	Leverage; Long-term leverage; Outside financing Bank financing	Assets Noncurrent assets	Positive Impact

Table 3: Description of the variables

Dependent Variable	**Description**
Accepted Start-up (*ACCEPTED*)	Dummy variable equalling 1 if the start-up is accepted in the accelerator and 0 otherwise
Independent Variables	
Start-up´s Total Own Equity *(LNTOTALOWNEQUITY)*	Natural logarithm of the total own equity
Start-up´s Total External Equity *(LNTOTALEXTERNALQUITY)*	Natural logarithm of the total external equity
Start-up´s Total Debt *(LNTOTALDEBT)*	Natural logarithm of the total debt
Start-up´s Proportion of Own Equity *(OWNEQUITYPERCENT)*	Ratio between the total own equity and the total assets
Start-up´s Proportion of External Equity (*EXTEQUITYPERCENT)*	Ratio between the total external equity and the total assets
Start-up´s Proportion of Debt (*DEBTPERCENT)*	Ratio between the total debt and the total assets
Firm Size *(LNSIZE*)	Natural logarithm of the number of employees in the start-up
Revenues (*LNREV*)	Natural logarithm of the total revenues of the previous year
Intellectual Property (*INTPROPERTY*)	Dummy variable equalling 1 if the firm has copyrights, patents and/or trademarks and 0 otherwise

Social Media and Website (*WEBSITESOCIALMEDIA*)	Dummy variable equalling 1 if the firm has website and/or Facebook/Twitter/LinkedIn and 0 otherwise
Number of Founders *(LNNRFOUNDERS)*	Natural logarithm of the number of founders of the start-up
Start-up's Age *(LNAGESTARTUP)*	Natural logarithm of the start-up's age
Previous Accelerators *(PREVACCELERATED)*	Dummy variable equalling 1 if the start-up has been accelerated before and 0 otherwise
Profitability	(profitability_dum1): dummy variable codded 1 for profitability between 0% and 5%; (profitability_dum2): dummy variable codded 1 for profitability between 6% and 10%; (profitability_dum3): dummy variable codded 1 for profitability between 11% and 15%; (profitability_dum4): dummy variable codded 1 for profitability between 16% and 20%; (profitability_dum5): dummy variable codded 1 for profitability higher than 20%; (profitability_dum6): dummy variable codded 1 for negative ROI); and 0 otherwise.
Founders' Gender *(LNMALE)*	Natural logarithm of the number of male founders
Founders' Entrepreneurial Experience (*ENTREPEXPER*)	Dummy variable equalling 1 if, at least, one founder per firm reported entrepreneurial experience and 0 otherwise

Founders' Job Experience *(JOBEXPER)*	Dummy variable equalling 1 if, at least, one founder per firm, reported previous job experience and 0 otherwise
Founders' Education Level	(*Higheducation*): dummy variable codded 1 for start-ups which reported, at least, one founder with bachelor/master/doctoral degree; (*Mediumeducation*): dummy variable codded 1 for start-ups in which founders reported highschool/vocational degree as the highest education level completed; (*Loweducation*): dummy variable codded 1 for founders who elementary/primary school is the highest level of education completed; and 0 otherwise

Table 4: Descriptive statistics at the start-up's level

	Observations	Percent	Mean	S.D.	Min.	Max.
Accepted						
0	2,729	79.47%	-	-	-	-
1	705	20.53%	-	-	-	-
Total	3,434	100%	-	-	-	-
Own Equity ($)	3,434	-	144,884.2	1,761,877	0	70,000,000
Outside Equity ($)	3,434	-	337,975.9	10,700,000	0	517,000,000
Debt ($)	3,434	-	137,045	2,907,184	0	122,000,000
Own Equity (%)	3,434	-	62.90	48.31	0	1
External Equity (%)	3,434	-	3.35	17.99	0	1
Debt (%)	3,434	-	1.71	13	0	1
Size	3,434	-	33	1,055.26	0	56,500
Revenues ($)	3,434	-	292,913.3	4,885,584	0	203,000,000
Intellectual Property						
0	1,615	47.03%	-	-	-	-
1	1,819	52.97%	-	-	-	-
Total	3,434	100%	-	-	-	-
Website/Social Media						
0	359	10.45%	-	-	-	-
1	3,075	89.55%	-	-	-	-

Total	3,434	100%	-	-	-	-
Number of Founders	3,434	-	3	2.95	1	103
Start-up´s Age	3,434	-	2.67	3.2	0	37
Prior Accelerators						
0	2,169	63.16%	-	-	-	-
1	1,265	36.84%	-	-	-	-
Total	3,434	100%	-	-	-	-
Sector of Activity						
Agriculture	586	17.06%	-	-	-	-
Artisanal	77	2.24%	-	-	-	-
Culture	36	1.05%	-	-	-	-
Education	528	15.38%	-	-	-	-
Energy	202	5.88%	-	-	-	-
Environment	149	4.34%	-	-	-	-
Financial Services	408	11.88%	-	-	-	-
Health	370	10.77%	-	-	-	-
Housing Development	47	1.37%	-	-	-	-
Information and Communication Technologies	292	8.50%	-	-	-	-
Infrastructure/facilities development	32	0.93%	-	-	-	-
Other	488	14.21%	-	-	-	-
Supply Chain Services	67	1.95%	-	-	-	-
Technical Assistance Services	34	0.99%	-	-	-	-
Tourism	66	1.92%	-	-	-	-
Water	52	1.51%	-	-	-	-
Total	3,434	100%	-	-	-	-
Profitability						
0%-5%	922	26.85%	-	-	-	-
6%-10%	279	8.12%	-	-	-	-
11%-15%	211	6.14%	-	-	-	-
16%-20%	261	7.60%	-	-	-	-
>20%	451	13.13%	-	-	-	-
Negative ROI	1,310	38.15%	-	-	-	-

Table 5: Descriptive statistics at founders' level

	Observations	Percent	Mean	S.D.	Min.	Max.
Age of Founders (years)	3,434	-	35.6	8.76	20	69
Gender of Founders	7,737	100%	-	-	-	-
Male	5,717	72.03%	1.6	0.94	0	3
Female	2,220	27.97%	0.65	0.75	0	3
Total	7,937	100%	-	-	-	-
Previous Entrepreneurial Experience						
0	1,132	32.96%	-	-	-	-
1	2,302	67.04%	-	-	-	-
Total	3,434	100%	-	-	-	-
Previous Job Experience						
0	276	8.04%	-	-	-	-
1	3,158	91.96%	-	-	-	-
Total	3,434	100%	-	-	-	-
Education Level						
High	3,131	91.17%	-	-	-	-
Medium	295	8.59%	-	-	-	-
Low	8	0.23%	-	-	-	-
Total	3,434	100%				

Table 6- Impact of the total amount of own equity, external equity and debt on the probability of the start-up being accepted in accelerators

	Logit			Probit		
VARIABLES	**accepted**	**accepted**	**accepted**	**accepted**	**accepted**	**accepted**
lntotalownequity	0.047**	0.038*	0.038*	0.029***	0.023**	0.023*
	(0.020)	(0.021)	(0.021)	(0.011)	(0.012)	(0.012)
lntotalexternalequity	0.080***	0.068***	0.069***	0.046***	0.040***	0.040***
	(0.012)	(0.014)	(0.014)	(0.007)	(0.008)	(0.008)
lntotaldebt	0.037**	0.026*	0.027*	0.022***	0.016*	0.016*
	(0.015)	(0.015)	(0.015)	(0.009)	(0.008)	(0.009)
lnsize		0.009	0.005		0.007	0.006
		(0.065)	(0.066)		(0.038)	(0.038)
lnrev		0.057***	0.056***		0.032***	0.032***
		(0.016)	(0.016)		(0.009)	(0.009)
intproperty		-0.215*	-0.215*		-0.117*	-0.114
		(0.123)	(0.125)		(0.070)	(0.071)
websitesocialmedia		0.623**	0.571**		0.322**	0.298**
		(0.261)	(0.261)		(0.142)	(0.142)
lnnrfounders		-0.072	-0.141		-0.042	-0.082
		(0.099)	(0.108)		(0.055)	(0.060)
lnagestartup		-0.179*	-0.166*		-0.100*	-0.095*
		(0.097)	(0.097)		(0.055)	(0.056)
prevaccelerated		0.363***	0.344***		0.205***	0.194***
		(0.117)	(0.119)		(0.066)	(0.066)
profitability_dum1		-0.178	-0.147		-0.099	-0.083
		(0.145)	(0.147)		(0.082)	(0.082)
profitability_dum2		-0.624***	-0.589**		-0.360***	-0.337**
		(0.239)	(0.248)		(0.134)	(0.137)
profitability_dum3		-0.199	-0.167		-0.101	-0.084
		(0.242)	(0.247)		(0.128)	(0.131)
profitability_dum4		-0.696***	-0.676***		-0.378***	-0.366***
		(0.225)	(0.231)		(0.123)	(0.126)
profitability_dum5		-0.519***	-0.502***		-0.268***	-0.260**
		(0.191)	(0.192)		(0.104)	(0.105)
lnmale			0.239**			0.132**
			(0.109)			(0.061)
entrepexper			-0.026			-0.017
			(0.127)			(0.073)
jobexper			-0.230			-0.130
			(0.230)			(0.128)
higheduc			14.439***			5.251***
			(0.649)			(0.206)
mediumeduc			13.910***			4.953***
			(0.569)			(0.175)
Constant	-2.896***	-3.360***	-17.590***	-1.692***	-1.956***	-7.081***
	(0.588)	(0.780)	(1.007)	(0.332)	(0.435)	(0.480)

Observations	3,019	3,019	3,019	3,019	3,019	3,019
r2_p	0.180	0.197	0.202	0.181	0.197	0.202

Note: The table evaluates the impact of the start-up's level of capital (own equity, external equity and debt), the impact of several start-up's characteristics (country of headquarters, social media and website, intellectual property, previous accelerators, number of founders, revenues, and size) and founders' characteristics (age of founders, gender, previous entrepreneurial experience, previous job experience and education level) on the probability of the start-up being accepted in accelerators. All regressions include controls for fixed effects at program accelerator and country headquarters. Robust standard errors with clusters for accelerator program, for the Logit and Probit estimates, are in parentheses. ***Statistical significance at 1%, **statistical significance at 5%, *statistical significance at 10%.

Table 7- Impact of a start-up´s capital structure on the probability of the start-up being accepted in accelerators: Logit model

VARIABLES	accepted	accepted	accepted	accepted	accepted	accepted
externalequitypercent	0.431*	0.358	0.350	0.134	0.158	0.148
	(0.238)	(0.222)	(0.226)	(0.245)	(0.231)	(0.236)
ownequitypercent				-0.576***	-0.410***	-0.416***
				(0.120)	(0.129)	(0.132)
debtpercentage	-0.366	-0.390	-0.442			
	(0.419)	(0.420)	(0.434)			
lnsize		0.068	0.063		0.041	0.035
		(0.063)	(0.064)		(0.064)	(0.065)
lnrev		0.070***	0.069***		0.065***	0.063***
		(0.016)	(0.016)		(0.016)	(0.016)
intpropert		-0.142	-0.144		-0.177	-0.179
		(0.124)	(0.126)		(0.121)	(0.123)
websitesocialmedia		0.681**	0.624**		0.670**	0.608**
		(0.264)	(0.262)		(0.267)	(0.264)
lnnrfounders		-0.016	-0.107		-0.041	-0.124
		(0.093)	(0.103)		(0.097)	(0.106)
lnagestartup		-0.125	-0.108		-0.142	-0.126
		(0.092)	(0.092)		(0.092)	(0.093)
prevaccelerated		0.395***	0.379***		0.375***	0.356***
		(0.115)	(0.116)		(0.115)	(0.117)
profitability_dum1		-0.281**	-0.250*		-0.232*	-0.199
		(0.133)	(0.135)		(0.139)	(0.141)
profitability_dum2		-0.767***	-0.722***		-0.730***	-0.689***
		(0.241)	(0.248)		(0.241)	(0.249)
profitability_dum3		-0.345	-0.305		-0.295	-0.258
		(0.235)	(0.240)		(0.238)	(0.244)
profitability_dum4		-0.844***	-0.822***		-0.788***	-0.763***
		(0.207)	(0.212)		(0.216)	(0.222)
profitability_dum5		-0.685***	-0.665***		-0.604***	-0.585***
		(0.184)	(0.186)		(0.185)	(0.186)
lnmale			0.279**			0.260**

			(0.109)			(0.109)
entrepexper_dum2			-0.018			-0.013
			(0.127)			(0.126)
jobexper_dum2			-0.116			-0.152
			(0.227)			(0.228)
higheduc_dum2			15.066***			16.078***
			(0.610)			(0.622)
mediumeduc_dum2			14.541***			15.554***
			(0.537)			(0.543)
Constant	-2.256***	-3.108***	-18.093***	-1.890***	-2.742***	-18.681***
	(0.610)	(0.779)	(0.991)	(0.619)	(0.804)	(1.025)
Observations	3,019	3,019	3,019	3,019	3,019	3,019
r2_p	0.159	0.185	0.191	0.168	0.189	0.194

Note: The table evaluates the impact of the start-up's level of capital (own equity, external equity and debt), the impact of several start-up's characteristics (country of headquarters, social media and website, intellectual property, previous accelerators, number of founders, revenues, and size) and founders' characteristics (age of founders, gender, previous entrepreneurial experience, previous job experience and education level) on the probability of the start-up being accepted in accelerators. All regressions include controls for fixed effects at program accelerator and country headquarters. Robust standard errors with clusters for accelerator program, for the Logit estimates, are in parentheses. ***Statistical significance at 1%, **statistical significance at 5%, *statistical significance at 10%.

Table 8- Impact of a start-up´s capital structure on the probability of the start-up being accepted in accelerators: Probit model

VARIABLES	accepted	accepted	accepted	accepted	accepted	accepted
externalequitypercent	0.239*	0.197	0.197	0.065	0.079	0.078
	(0.140)	(0.130)	(0.132)	(0.144)	(0.136)	(0.138)
ownequitypercent				-0.336***	-0.242***	-0.245***
				(0.068)	(0.073)	(0.075)
debtpercentage	-0.208	-0.218	-0.248			
	(0.225)	(0.229)	(0.235)			
lnsize		0.041	0.039		0.026	0.024
		(0.036)	(0.036)		(0.037)	(0.037)
lnrev		0.039***	0.038***		0.036***	0.036***
		(0.009)	(0.009)		(0.009)	(0.009)
intproperty		-0.078	-0.077		-0.097	-0.096
		(0.070)	(0.071)		(0.069)	(0.070)
websitesocialmedia		0.354**	0.327**		0.344**	0.314**
		(0.143)	(0.143)		(0.144)	(0.143)
lnnrfounders		-0.013	-0.067		-0.027	-0.076
		(0.052)	(0.058)		(0.054)	(0.060)
lnagestartup		-0.064	-0.056		-0.076	-0.069
		(0.052)	(0.052)		(0.053)	(0.053)
prevaccelerated		0.225***	0.214***		0.211***	0.200***
		(0.064)	(0.065)		(0.065)	(0.066)

profitability_dum1		-0.157**	-0.141*		-0.128	-0.112
		(0.074)	(0.075)		(0.078)	(0.079)
profitability_dum2		-0.444***	-0.416***		-0.422***	-0.396***
		(0.134)	(0.136)		(0.134)	(0.137)
profitability_dum3		-0.191	-0.170		-0.158	-0.138
		(0.126)	(0.129)		(0.127)	(0.130)
profitability_dum4		-0.470***	-0.455***		-0.432***	-0.416***
		(0.115)	(0.117)		(0.119)	(0.122)
profitability_dum5		-0.365***	-0.355***		-0.318***	-0.309***
		(0.100)	(0.101)		(0.100)	(0.101)
lnmale			0.158***			0.146**
			(0.061)			(0.061)
entrepexper_dum2			-0.011			-0.011
			(0.073)			(0.072)
jobexper_dum2			-0.062			-0.082
			(0.126)			(0.127)
higheduc_dum2			5.071***			5.271***
			(0.164)			(0.185)
mediumeduc_dum2			4.776***			4.976***
			(0.128)			(0.149)
Constant	-1.284***	-1.813***	-6.841***	-1.080***	-1.592***	-6.789***
	(0.342)	(0.441)	(0.452)	(0.344)	(0.453)	(0.462)
Observations	3,019	3,019	3,019	3,019	3,019	3,019
r2_p	0.159	0.185	0.190	0.168	0.188	0.194

Note: The table evaluates the impact of the start-up's level of capital (own equity, external equity and debt), the impact of several start-up's characteristics (country of headquarters, social media and website, intellectual property, previous accelerators, number of founders, revenues, and size) and founders' characteristics (age of founders, gender, previous entrepreneurial experience, previous job experience and education level) on the probability of the start-up being accepted in accelerators. All regressions include controls for fixed effects at program accelerator and country headquarters. Robust standard errors with clusters for accelerator program, for the Probit estimates, are in parentheses. ***Statistical significance at 1%, **statistical significance at 5%, *statistical significance at 10%.

APPENDIX

Appendix 1- Impact of the total amount of own equity, external equity and debt on the probability of the start-up being accepted in accelerators: LPM

VARIABLES	accepted_dum2	accepted_dum2	accepted_dum2
lntotalownequity	0.007**	0.005*	0.005*
	(0.003)	(0.003)	(0.003)
lntotalexternalequity	0.011***	0.010***	0.010***
	(0.002)	(0.002)	(0.002)
lntotaldebt	0.005**	0.003*	0.003*
	(0.002)	(0.002)	(0.002)
lnsize		-0.000	-0.000
		(0.008)	(0.008)
lnrev		0.007***	0.007***
		(0.002)	(0.002)
intproperty_dum2		-0.024	-0.024
		(0.015)	(0.016)
websitesocialmedia_dum2		0.056**	0.051**
		(0.026)	(0.026)
lnnrfounders		-0.006	-0.013
		(0.012)	(0.013)
lnagestartup		-0.021*	-0.020*
		(0.011)	(0.011)
prevaccelerated_dum2		0.043***	0.041***
		(0.015)	(0.015)
profitability_dum1		-0.023	-0.021
		(0.018)	(0.018)
profitability_dum2		-0.063**	-0.059**
		(0.028)	(0.028)
profitability_dum3		-0.029	-0.024
		(0.027)	(0.028)
profitability_dum4		-0.074***	-0.070***
		(0.025)	(0.025)
profitability_dum5		-0.059**	-0.057**
		(0.024)	(0.023)
lnmale			0.027**
			(0.013)
entrepexper_dum2			-0.008
			(0.015)
jobexper_dum2			-0.025
			(0.026)
higheduc_dum2			0.353***
			(0.081)
mediumeduc_dum2			0.295***
			(0.072)
Constant	-0.604***	-0.693***	-1.005***
	(0.150)	(0.135)	(0.140)
Observations	3,434	3,434	3,434

R-squared	0.271	0.281	0.284
r2_a	0.212	0.220	0.223
Rss	408.7	402.9	400.9
Mss	151.6	157.3	159.4
Rmse	0.359	0.357	0.356
r2	0.271	0.281	0.284
df_r	127	127	127
Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1			

Appendix 2- Impact of a start-up's capital structure on the probability of the start-up being accepted in accelerators: LPM

VARIABLES	**accepted**	**accepted**	**accepted**	**accepted**	**accepted**	**accepted**
Externalequitypercent	0.060	0.048	0.047	0.020	0.022	0.021
	(0.038)	(0.035)	(0.035)	(0.039)	(0.036)	(0.037)
Ownequitypercent				-0.071***	-0.049***	-0.049***
				(0.016)	(0.016)	(0.016)
debtpercentage	-0.043	-0.041	-0.045			
	(0.048)	(0.048)	(0.048)			
Lnsize		0.008	0.008		0.004	0.004
		(0.008)	(0.008)		(0.008)	(0.008)
lnrev		0.009***	0.008***		0.008***	0.008***
		(0.002)	(0.002)		(0.002)	(0.002)
intproperty		-0.015	-0.015		-0.019	-0.019
		(0.016)	(0.016)		(0.016)	(0.016)
Websitesocialmedia		0.061**	0.056**		0.060**	0.055**
		(0.026)	(0.026)		(0.026)	(0.026)
Lnnrfounders		0.000	-0.010		-0.002	-0.012
		(0.011)	(0.012)		(0.012)	(0.013)
Lnagestartup		-0.015	-0.014		-0.017	-0.015
		(0.011)	(0.011)		(0.011)	(0.011)
prevaccelerated		0.048***	0.046***		0.045***	0.043***
		(0.015)	(0.015)		(0.015)	(0.015)
profitability_dum1		-0.037**	-0.035**		-0.031*	-0.029
		(0.017)	(0.017)		(0.017)	(0.018)
profitability_dum2		-0.084***	-0.079***		-0.078***	-0.074***
		(0.027)	(0.027)		(0.027)	(0.027)
profitability_dum3		-0.049*	-0.043		-0.042	-0.036
		(0.027)	(0.028)		(0.027)	(0.028)
profitability_dum4		-0.095***	-0.090***		-0.087***	-0.082***
		(0.024)	(0.024)		(0.025)	(0.025)
profitability_dum5		-0.084***	-0.081***		-0.074***	-0.072***
		(0.023)	(0.023)		(0.023)	(0.023)
lnmale			0.033**			0.031**
			(0.013)			(0.013)
entrepexper			-0.005			-0.005

			(0.015)			(0.015)
jobexper			-0.013			-0.017
			(0.026)			(0.026)
higheduc			0.347***			0.358***
			(0.074)			(0.079)
mediumeduc			0.288***			0.299***
			(0.065)			(0.069)
Constant	-0.493***	-0.650***	-0.970***	-0.452***	-0.603***	-0.930***
	(0.162)	(0.142)	(0.145)	(0.155)	(0.139)	(0.145)
Observations	3,434	3,434	3,434	3,434	3,434	3,434
R-squared	0.254	0.271	0.275	0.260	0.274	0.278
r2_a	0.195	0.210	0.213	0.201	0.213	0.216
Rss	417.8	408.3	406.1	414.6	406.9	404.8
Mss	142.5	152.0	154.2	145.7	153.3	155.5
Rmse	0.363	0.359	0.358	0.361	0.358	0.358
r2	0.254	0.271	0.275	0.260	0.274	0.278
df_r	127	127	127	127	127	127
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						