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RESEARCH ARTICLE

THE NATURE OF ASSOCIATION BETWEEN INVESTMENT DECISION AND FINANCIAL DECISION FROM AN ENTREPRENEURIAL POINT OF VIEW

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ABSTRACT

This paper investigates empirically the association between financial decision and investment decision by considering the entrepreneurial process. We consider two modalities of financing in internal finance and external debts. We follow different steps of entrepreneurial business process in business model, business plan and nascent entrepreneurial firms. The logistic regression demonstrates that in the stage of elaborating the *business model*, investment decision is associated with financial decision in financial debts. Nevertheless, when considering the stage of preparing the *business plan*, financial decision in internal funds is associated with investment decision. Nevertheless, at the inception stage, internal funds are negatively associated with investment decision leading to the lack of financial constraints for novice American entrepreneur.

INTRODUCTION

Under the assumption of Modigliani and Miller, (1958), the capital structure does not affect the market value of the firm. In the current conditions, the hypothesis imposed by MOMI, (1958) is irrelevant. This is due to the fact that the debt is an important source of financing. In fact, using financial resources that are not undervalued by the market, particularly internally generated funds could solve the under-investment problem. In fact, the entrepreneurs have more information about the entrepreneurial process. Fazzari, Hubbard and Petersen (1988) predict that the investments of financially constrained firms i.e. firms that face high costs of external financing would display relatively high responsiveness to the internal funds. Following (Evan's and Jovanovic, 1989), financial constraints are defined as a result of a positive relationship between initial wealth and decision of investment in novice entrepreneurial firms. Some studies demonstrated the role of financial capital in inhibiting business start-up, (Evans and Jovanovic 1989; Bates 1997; Blanchflower and Oswald 1998; Fischer and Massey, 2000). The literature on financial intermediation (Leland and Pyle, 1977), offers the breakdown of the sources of investment financing. It has generally focused on the debt contract, which has often been considered as the optimal method of financing. In fact, the literature contains contradictory findings. On the one hand, some authors assert that high risk firms with more uncertainty condition prefer debt contracts to equity contracts, (Hellmann and Stiglitz, 2000). On the other hand, various authors argue that the firm's propensity to choose equity increases in direct proportion to the risk associated or uncertainty condition to the project they wish to finance. However, as de Meza and Webb (1987) have shown, a number of distorting phenomena such as credit rationing may simply disappear if equity is accepted as an alternative source of finance. Interestingly, however, under the Stieglitz-Weiss assumptions, equity rather than debt is shown to be the equilibrium

method of finance. De Meza and Webb, 1987, pp. 281-282 writes "The structure of information also has implications for the method of finance. Entrepreneurs with projects that are attractive to banks attempt to choose financial structures that signal their characteristics. With reference to young, strongly innovation-oriented German SMEs Schäfer *et al.* (2004) demonstrate the truth of the hypothesis that "Investments with a high intrinsic and financial risk are more likely to be equity than debt-financed. Obviously, as Schafer *et al.* note, 2004, p. 5 "for high-risk entrepreneurs lacking collateral, this route of returning to the preferred loan market is not open and equity may appear as the only remaining option". Therefore, the investment decision for more uncertain steps of entrepreneurial process depends on the financing decision and particularly in internal funds *ceteris paribus*. We aim in our study to prove if the investment decision depends on the financing decision when we consider the entrepreneurial process in *business model*, *business plan* and nascent entrepreneurial firm. Many studies are concerned with the nature of association between the investment decision and the financial decision. Nevertheless, the majority of these ones were interested in existing firms, (Asterbo and Benhardt, 2003; Chaganti and al, 1995 and Ou and Haynes, 2006). Considering novice entrepreneurs regarding their decisions of investment and financing constitute our concern in this study. Figure 1 presents the conceptual framework.

Literature review

There is a rich literature examining investment-financing linkages in static models (i.e., investment and/or financing decisions are made at a single point in time and are irreversible) with and without stockholder-bondholder conflicts, (Myers, (1977), Jensen and Meckling, (1976); Mauer, Childs and Ott, 2003). In this paper, we aim to study the interaction between investment and financing decisions in the case where the entrepreneurial firm has the flexibility to dynamically manage both decisions over time. Fisherian Theorem¹

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¹¹ The Fisher separation theorem states that:

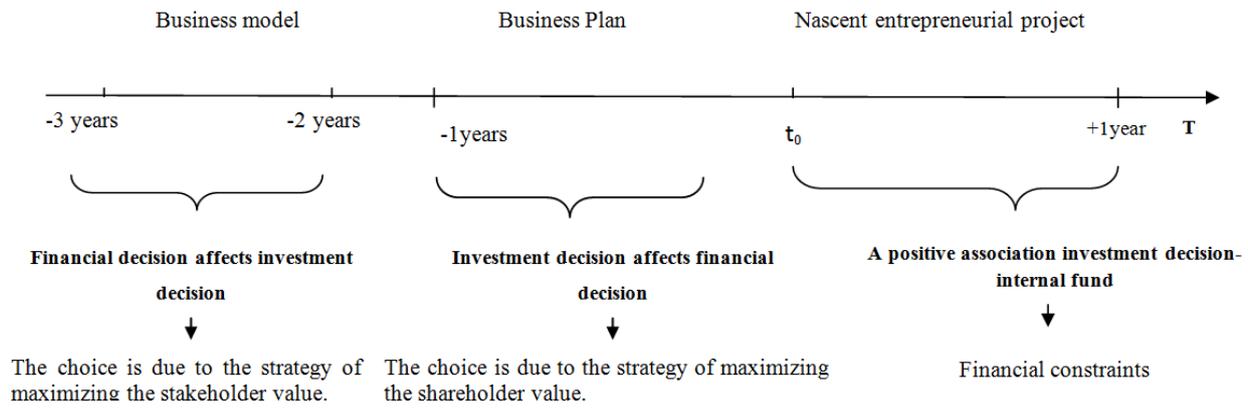


Figure 1. The conceptual framework

argues that managers make investment decision firstly, and make financing decision secondly, but the decision are made in separate manner and independently one to another. Based on two step decision of Fisher separation theorem, with asymmetry of information, this paper argues that investment decision is associated financing decision and inversely. Authors state that the POT is even more relevant for the SME sector because of the relatively greater information asymmetries and the higher cost of external equity for SMEs, (Ibbotson *et al.*, 2001). However, this paper also argues that there is different effect of investment opportunity set on financing decision. Less uncertainty condition (business plan step) decrease investment risk. Thus, the effect of investment opportunity set on financing decision will be positive *ceteris paribus*. In contrast, high uncertainty condition (business model step), increase investment risk, then reducing debt financing. Thus, the effect of financing decision (by internal funds) on investment opportunity set will be positive *ceteris paribus*. Entering financial market is limited due to risk associated with financing entrepreneurial project. The association between investment decision and financial decision at the entrepreneurial process will be analyzed in the next sections.

The entrepreneurial process in business model, business plan and nascent entrepreneurial firm

The entrepreneurial process is iterative rather than linear. If the axis of time is considered there, it comprises five generic phases. We can distinguish the idea, the business opportunity, the business model, the strategic vision and the business plan, (Verstraete and Saporta, 2006). It is not a question about that the entrepreneurial process is marked out, for its starting, by the idea and, for its end, by the business plan. To a certain extent, the process evokes a multi-stage device where each stage composes the following one. It works out its business model, then its strategic vision which it formalizes in a business plan.

**The business model and the financial decision*

The business model is a document which is elaborated before the business plan. It aims to show and explain why an idea in the business constitutes an opportunity. From preliminary research we assume that an entrepreneur who elaborates the business models undergo an initial entrepreneurial investment decisions. For the financier in particular, it presents the opportunity and develops it. The business model becomes essential during these last years to convince the stakeholders

- the firm's investment decision is independent of the consumption preferences of the owner;
- The investment decision is independent of the financing decision.
- The value of a capital project (investment) is independent of the mix of methods – equity, debt, and/or cash – used to finance the project.

about a viable opportunity at a given moment and that the activities which were going to result from this could generate income, (Verstraete and Saporta, 2006). It is related to the strategic vision of which it is the main component but it evacuates certain aspects that the strategy cannot elude. The following diagram Figure 2, and which can be read upwards or conversely, presents the business model (BM) which constitutes the junction point between its high part and its low part. On the basis of the top, the idea must coincide with a socio-economic reality to create a market. In the event of absence of business appropriateness, the process turns over to the starting box. Nevertheless, to conceive the BM, or to model the offer, it is necessary to join together and exploit resources and competences. The comprehension of the *business model* is not limited to an ascending reading of the diagram. Owners of resources must perceive the value of the BM. Indeed, a first passage consists in convincing that the financial resources will follow the channel envisaged. The second corresponds to the division of this remuneration, so that the supplier of resources is convinced about the project. In this direction, the owners of resources, and more still the recipients, influence the offer or the initial decision of investment (BM), *ceteris paribus*. Respectively, on the right and on the left of the BM, we distinguish the two concepts of value and convention. They take place throughout the process. From the downward reading, the passage of the idea to opportunity is shown by the value of the idea and a convention about its market. Based on our review of the role of the business model as a measure of investment decision on financing decision, we aim to test the following hypotheses:

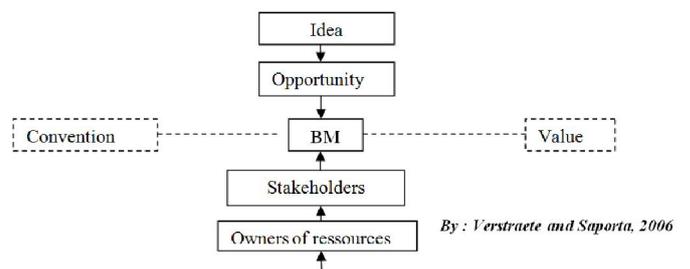


Figure 2. The ascending and downward reading of the business model

H1: For the novice entrepreneurs in phase of development of the “Business model”, the financing decision influences the investment decision.

After preparing the business model and convince the stakeholders, the entrepreneur must prepare the business plan for convincing the supplier of resources about the legitimacy of their project that needs financial resources.

**The Business plan and the financial decision*

The business plan is the written form of the communicating exercise of conviction of the strategic vision of the project to the shareholders. The model considered is able to generate sufficient shareable value to the part to which the document is addressed, and whose resources are expected. It registers the project in time by the explanation of the essential resources to achieve the goals and to carry out the vision. The business plan presents the work carried out on each phase, and present why and how, concretely, it is probable that the events proceed like previsions. Indeed, entrepreneurship appears by the impulse² of an organization crystallizing a set of resources partially or completely joined together to serve the vision of an entrepreneur or an entrepreneurial team, (the investment decision defines financing decision *ceteris paribus*). This discussion leads to the following hypothesis:

H2: For the entrepreneurs in phase of elaborating the business plan, investment decision influences financing decision.

*The Nascent entrepreneurial firm and the financial decision

In fact, the study of the impact of financial capital on the decision of new firm creation has generated mixed results, (Reynolds and White, 1997). One first part of studies demonstrated the role of financial capital in inhibiting business start-up, (Evans and Jovanovic 1989; Bates 1997; Blanchflower and Oswald 1998; Fischer and Massey, 2000). Another part of researches demonstrated that financial capital hasn't an effect on new firms' creations. A study conducted from American news firms in 1992, has demonstrated that new firms are established with capital less of \$5,000 (American Census Bureau). Based on our review of the role of financial resources at inception step or the less uncertain step of the entrepreneurial process, we propose to study the following hypotheses:

H3: Increasing household internal funds influence the likelihood of investment decisions in nascent entrepreneurial firms.

Data

Our analysis uses the detailed data in the Panel Study of Entrepreneurial Dynamics (PSED). Reynolds, (2011) fully describes the background and the sampling methodology. The PSED is a longitudinal database selecting the period 2005–2010. PSED was started in 2005 with the selection of a cohort of 1214 nascent entrepreneurs chosen from a representative sample of 31845 adults. In the first year, a follow-up interview was completed with 1214 entrepreneurs (80% of the original cohort): 87% of the interviewed persons are 'novice' entrepreneur; 60% of them have accepted to participate to a second interview after one year.

MODELS

We adopt the method of the logistic regression step by step. It is a question of determining on the one hand which variable of financial capital will determine the development of the *business model*. In addition, we study for which financial variables the development leads firstly to the *business plan* and secondly to nascent entrepreneurial firm. Our main concern is to test the existence of an association between the investment decision and the financial decision. In fact, we use three proxies of initial entrepreneurial investment decision. First, the business model, second the business plan and third the nascent entrepreneurial firm. Our basic models are presented under the following linear equations with the whole of the explanatory variables and endogenous which are explained in a way

² The term "impulse" is preferred at the end "creation" and this semantic choice has its importance. The impulse comprises the initial push, this force exerted to modify a given state, but it integrates also the development because the push can continue. Thus, the entrepreneur can be persistent and certain individuals deploy this force continuously (for this reason, the creation of a firm is sometimes only one phase of the phenomenon), (Verstraete and Barneto, 2008).

above more detailed. The random variable or the explanatory variables is in the term of error (ϵ) and the constant corresponds to the average effect of the omitted or hidden variables.

$$\text{Model (1)} \quad BM_{pi} = \theta_1 + \beta_1 \text{financing}_{pi} + \epsilon_i \quad \text{Model (2)} \quad \text{nouventrep}_i = \theta_3 + \beta_3 \text{financing}_i + \epsilon_i$$

$$\text{Model (3)} \quad \text{financing}_{pi} = \theta_2 + \beta_2 BP_{pi} + \epsilon_i$$

Measure of variables

Time "T" is a dichotomous variable which takes the value "1" if the project is before the immediate launching of the project i.e. during the phase of design from the "Business model"³ and "0" if it is in phase of use of a business plan⁴ to launch the project.

Financing: presents the different modalities of financing in:

- Internal equity: dichotomous variable coded "1" when the share in capital of the company held by the entrepreneur exceeds or equal 50%;
- Internal Debt: Debt from family, friends, colleagues...
- Internal funds: a binary variable which take the value "1" if the entrepreneur resorts to the contribution in internal equities or the internal debt and "0" otherwise;
- Financial Debts: It is a binary variable which is coded "1" if the entrepreneur used debt and "0" otherwise;
- Nouventrep: Dichotomous variable, coded '1' if novice entrepreneur and 0 otherwise;

*Definition of 'novice' entrepreneur

Novice entrepreneurs were viewed as individuals with no prior minority or majority business ownership experience either as a business founder, an inheritor or a purchaser of an independent business, but who currently own a minority or majority equity stake in an independent business that is either new, purchased or inherited, (Ucbasaran and *et al.*, 2005). To be classified as a nascent entrepreneur, a respondent must have answered yes to either or both of the following questions (Reynolds, 2000):

- Are you, alone or with others, now trying to start a new business?
- Are you, alone or with others, now starting a new business or new venture for your employer?
- Furthermore, those individuals who replied yes to the above two questions must also have met three additional qualifications:
- They expect to be owners or part owners of the new firm.
- They have been active in trying to start the new firm in the past 12 months.
- The effort is still in the start-up or gestation phase and is not an infant firm
- The final sample, 1046 respondents were identified as nascent entrepreneur and 45 in the comparison group for a total of 1214 cases.

Descriptive statistics

Table 1 presents the frequencies of the dependent and independent variables. We can conclude that the majority of the novice

³ This variable is measured by taking of account the question carrying over the period since which the entrepreneur began the formulation of the strategy of the new activity. The latter in the event of BM is between 2 to 3 years. We took into account the definition of Amit and Zot, 2001, according to him the BM "is contained, the structure and the mechanisms of governance which are indicated to create value by the exploitation of the opportunity

⁴ For the measure of this variable, the entrepreneur responds 'yes' to the following question: 'Over the past twelve months have you done anything to help start a new business, such as working on a business plan?'

entrepreneur is in the stage of development of the business plan. These entrepreneurs are more interested in inception step or the nascent entrepreneurial firm.

Table 1. Frequency of dependent and independent variables

Variables	1 (%)	0 (%)
BM	60,3	39,1
BP	98,4	1,6
Nascent entrepreneurial firm	86,2	13,7
Internal funds	61,4	38,6
Internal equity	36,3	63,7
Internal debts	40,7	59,3
Financial debts	15,8	84,2

RESULTS

Table 2 presents the results from the logistic regression. The first model presents the BM as the dependent variable. The second model presents the different options of financing in internal and external funds as dependent variables. And the third model is interested to study the role of internal finance as a determinant of new firm foundation.

Table 2. Results of the logistic regression*

Dependent variables	Independent variables	coefficient	Standard error	z-stastic	Probability
<i>Model 1 : Investment decision is associated with financial decision</i>					
<i>Business Model (BM)</i>	Internal funds	0,038	0.120915	0.316029	0.7520
	Internal equity	0,044	0.122767	0.364829	0.7152
	Internal debts	0,00055	0.074403	0.074407	0.9407
	Financial debts	-0,452 **	0.159263	-2.842270	0.0045
<i>Model 2 : Financial decision is associated with investment decision</i>					
Internal funds Internal equity Internal debts Financial debts	<i>Business Plan</i>	0,88**	0.460306	1.926795	0.0540
		0,83	0.562236	1.488458	0.1366
	(BP)	0,732	0,23345	1,5675	0,1245
		0,919	0,631223	0,100765	0,9197
<i>Model 3 : Financial decision is associated with investment decision</i>					
(Nouventrep)	Internal funds (Net worth ¹)	-0.001534	0.141763	-0.010819	0.9914

* Each dependent and independent variables constitutes a model which is estimated separately.
 ** Significant at 5%.

From analyzing Table 2, we conclude that at the stage of development of the business model, the investment decision is associated with the financial decision and particularly in financial debts. This influence is negative and significant. An entrepreneur who has some financial debts is not motivated to invest by defining a strategy of investment mobilized by the BM. In fact, this result stressed of Myers, 1977 model that shows why a company with a material probability of defaulting on its debt is likely to cut back on positive-NPV investments that require new capital. In Stew’s model, the possibility of such value reducing underinvestment arises from the combination of two conditions: (1) the unwillingness of existing creditors to provide new funding for the investment, which must then be financed by either existing or new equity holders, or new and junior debt holders; and (2) the unwillingness of existing creditors to write down or otherwise reduce the value of their claims. Under these conditions, potential investors face a major deterrent to providing funding for the new investment. However, from the point of view “business plan”, the decision of financing in internal funds has a positive and significant effect on the investment decision. The financing of an opportunity based on intangible capital as human capital can be done only by the contribution of the entrepreneur, (Barneto, 2008). In other words, the entrepreneur who has some initial funds can undertake project with positive current value. Indeed, according to (Versaete and Saporta, 2006), the business plan is a model which explains the shareable value between the different owners. This value is expressed at the same time in a quantitative and qualitative way. In other words, a “business plan” is written for that whose resources are expected. The majority of the document must convenient to the part to which he

is addressed. Indeed, the owners of financial resources, (prospective shareholders, banks, venture capitalists, business angels, etc) are the first parts of which the creator thinks during the drafting of BP. In fact, model (3) explains that financial capital mobilized in net worth or initial saving has insignificant and inelastic effects on the decisions of starting new firms. This is consistent with the fact that 90% of respondents have some initial financial capital different from zero. Entrepreneurs in our sample don’t seem to suffer from liquidity constraints. We can conclude here that financial decision does not affect investment decision for novice entrepreneurial project. In fact, based on the pecking order theory, prior studies investigate the strength of the relation between investments and internal funds. For example, Fazzari, Hubbard and Petersen (1988) predict that the investments of financially constrained firms i.e. firms that face high costs of external financing would display relatively high responsiveness to the internal funds. By considering the sample of novice entrepreneurial firms, Evans and Jovanovic (1989) show evidence of the existence of financial constraints when there is a positive correlation between entrepreneurship and initial wealth. The study of the existence of financial constraints for a sample of 1214 novice entrepreneurs drawn from the PSED, show that that entrepreneurs do not have financial constraints, (Fourati and Affes, 2011).

Conclusion

The purpose of this article is to clarify empirically the existence of an association between investment decision and financial decision in a sample of novice entrepreneurs in the United States. We consider separately the different step of new firm creation in successively: business model, business plan and nascent entrepreneurial firm. We conclude that, in the step of elaborating the business model, financial debts demotivate the entrepreneur from making an initial investment decision in entrepreneurial project. We have also found a positive and significant correlation between business plan and internal funds. At inception case, initial wealth is not correlated with entrepreneurship as evidence of lack of financial constraints for novice entrepreneur in our sample. Such results may be explained that before firm creation or uncertain condition, the entrepreneur considers different modalities of financing in internal financing and debts. Nevertheless, in less uncertain condition, the nascent entrepreneurial project step or the inception case, the entrepreneur lacks of financial constraints and his financial decision is a decision of indebtedness. Future developments of the present research may study the after nascent entrepreneurial project step. What about the nature of association between investment decision and financial decision at this stage?

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