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RESEARCH ARTICLE

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ON THE VULNERABILITY AS SELECTION CRITERIA FOR ENTREPRENEURSHIP INCUBATION PROCESS

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ABSTRACT

This paper presents an analysis of the vulnerability as selection criteria for entrepreneurship incubation process. It is a study case by Ativa Business Incubator at the Federal Institute of Mato Grosso – IFMT in Brazil. Many businesses in Brazil face serious problems in the two first years of operation because of a lack of entrepreneurship education. This situation leads entrepreneurs to vulnerable situations in their business. To help them overcome this situation, we at Ativa Business Incubation offer the business incubation process. A six to ten follow-up together with the business to help them find solutions for their problems. Once we have limited resources, we need to establish a selection criteria so to assure the selected business really needs our help. We have developed and improved a method for that, which we share here as a case study based on a qualitative methodology. The results of every selection shows we have been effective in selecting businesses who really are in vulnerable situations.

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INTRODUCTION

Many informal, individual, micro or small businesses start their ventures with great desire, good ideas, workforce, but in an empirical way, without seeking education and the necessary technical knowledge. Therefore, at least a third of companies in Brazil close before 2 years of operation (Exame, 2019) and (Rede Jornal Contábil, 2019). If we focus on micro and small companies, the amount that closes in the first year of operation can reach up to 80% (Negócios Digitais na Prática, 2019). In experiences with other extension and research projects involving entrepreneurs, product suppliers and service providers in a specific region of Brazil, in the city of Barra do Garças in the state of Mato Grosso, where this case study took place, it was possible to verify this lack of preparation in the management of their business several times. It was possible to notice the lack of basic knowledge of administration and accounting, the absence of investment in marketing or an ineffective investment, they did not demonstrate knowledge of business management systems or did not feel able to use, among other problems. Checking these needs, we started informal conversations with these professionals, highlighting the points of vulnerability that we noticed. Questioning them if they were aware of these, most claimed not to have noticed and added that they felt a lack of training.

According to Pinto Júnior (2021), establishing a training plan and an action plan are effective ways to overcome vulnerabilities and help businesses to go through business problems. Both of these plan are used as key-tools in Ativa Business Incubation Process. About this Incubation Process we have developed a specific methodology for that which prioritizes small companies and the ones in vulnerable situations. Thus, because we are a public and free school, so we consider this to be a social action, since the incubator allows the enterprise to remain in operation, contributing to local development, generating employment and income for those who benefit directly and indirectly from the incubation process. According to MCT and SEPTE (2000) for a city or region, the benefits resulting from the installation of an incubator are many. So we are also preparing to make our methodology public and encouraging other schools to create their Business Incubators like ours. The MCT and SEPET (2000) also point out that agents willing to set up an incubator in a certain region must act as promoters, disseminating their concept of incubator and the benefits arising from its implementation. Thus helping to develop vulnerable companies and encouraging new entrepreneurs to seek knowledge about entrepreneurship, avoiding the early mortality of these businesses. There are several reasons for a company's mortality. The sanitary crisis of the pandemic period of the new SARS-Cov-2 coronavirus was another one of them, causing an unstable scenario of worldwide crisis, which aims to recover vulnerable businesses in

order to stimulate economic and social development. According to Ferraz (2019), one of the most recurrent themes in studies on entrepreneurship is entrepreneurial behavior. For the author, this entrepreneurial behavior is not static, just as the market is not. Entrepreneurship is important for economic and social growth and development. As Sebrae (2013, p. 12) points out, to undertake is to seek, it is a cyclical action; it's not coming and stopping. As you can see, to be an entrepreneur you need to be predisposed to this, to be predisposed to develop as such. According to Raupp and Beuren (2011) originally, the idea of incubators was associated with the purpose of stimulating the emergence of businesses resulting from technological projects developed in university or non-university research centers. Currently, there are incubators that focus on non-technology based companies, as we will see here. Business incubators allow businesses to mature and stabilize in the market, but for that to happen there are steps to be followed. On the following lines we will have a contextualization of the Incubation Process; we will identify factors related to company mortality; a brief summary of what entrepreneurship is; the necessary documentation; the importance of raising awareness for prospecting projects will be addressed; the selection process (Vulnerability pre-diagnosis application); Assessment of the degree of risk and selection of projects and about the Incubation process.

Research Elaborations: According to Sebrae (2015), most Brazilian incubators are non-profit and linked to universities and technology parks, and the connection with academia is the main benefit to the incubated companies. With regard to the concept of incubation, Barboza (2000) shows us that incubation under any angle or approach analyzed implies providing controlled conditions to favor the birth and growth of a new life. This means that the incubation process reduces a company's mortality rates, so Barboza (2000) concludes that:

The constitution of an Incubator must start with a clear design based on the analysis of the problem or opportunity to be faced, but also with a support network where its members are clearly identified and committed to the project (BARBOZA, 2000, p. 14). Raupp and Beuren (2006) shows that micro and small companies are not always prepared for the effects of increased competitiveness, given that they have a simpler business structure compared to medium and large companies. The authors emphasize that for these micro and small companies to reduce instability, it is necessary to install themselves in business incubators. Filardi et al (2012) says that the dynamics and growth of the economy in developing countries, the so-called emerging countries, depend largely on the ability to create companies capable of survival (FILARDI ET AL, 2012, p. 811). These companies, according to the authors, generate work and income, participating in the economic development of their region. Furthermore, micro and small companies are increasingly taking an active part in the economy, and that is why monitoring is necessary as there is mortality early in a large percentage of these companies. For a company to survive it is necessary to understand the factors that contribute to mortality, but few microentrepreneurs have a notion of entrepreneurship and management, and many do not understand the complexity of running a business, they do not know the external and internal factors that cause instability in their companies, besides having difficulty in separating the venture cash from the expenses of their personal life. Adizes (1990) warns that the first factor associated with early mortality occurs because many businesses begin without having identified an existing need in the market to be satisfied (ADIZES, 1990, apud FILARDI ET AL, 2012). Market/demand surveys are essential to predict the market and target audience. Checking the classification of factors associated with mortality (Table 1), it can be seen that there are factors faced by most companies, and incubators can use these classifications as a preliminary diagnosis.

According to MCT (2000), micro and small companies that show up in the market without the support of incubators have less chances of incorporating innovations in their production or service provision processes.

Study Case: On the Vulnerability as Selection Criteria for Entrepreneurship Incubation Process

Presenting the Methodology: We developed a methodology for Incubation of Companies, specially those in a vulnerable situation. To better understand the selection process we must first explain some facts about the methodology. The methodology is mainly intended for Business Incubators based in educational institutions and offering or intending to offer incubation free of charge. It is also possible to implement the methodology as a project, without a link to a Business Incubator. The methodology is a result of the experience and experimentation of 11 extension projects, the didactic feedback of 3 teaching projects and the scientific maturation provided by 2 research projects over 3 years of intense work that resulted in the pre-incubation of 67 ideas and businesses and in the incubation of 71 enterprises. It was created to serve informal entrepreneurs, micro and small companies that seek the help of a Business Incubator as Ativa Business Incubator of the Federal Institute of Mato Grosso. About the structure needed to run the Business Incubator, we have:

Personnel Structure: 1 Manager, 1 Advisor, 1 Secretary and Technical Commission proportional to the number of projects. The Manager acts as leader of all incubation processes. It plays a guiding and monitoring role in the activities developed by the personnel structure, of the pre-incubated and incubated, so that the procedures flow harmoniously, always seeking the growth of the projects served, according to the characteristics of vulnerabilities detected in the diagnostic analysis. The Advisor supports managers in the incubator's bureaucratic activities and acts as a link between the personnel structure and the projects, proposing support and responding to requests. It is a fundamental role in any incubator, as it absorbs a large part of the activities that would be required of managers, seeking quick and lasting solutions, always focusing on the well-being of the incubator's ventures and personal structure. It is the role of the secretary to be always aware of changes and aware of the process flows existing in the incubator. It has initiative and proactivity to support the activities carried out by the managers, always aiming to reach the goals of the incubator and the incubated companies. Both the role of advisor and secretary can be performed by scholarship students. The members of the Technical Committee will act as Mentor and Consultant. This commission can be made up of professors, administrative technicians or professionals in technical areas from other institutions. The members of the technical committees must be from an area related to the projects served or their problems dealt with in the incubation. For example, an administration professor is the ideal mentor for a game startup, which has no problem with technical development, but is incubated to develop its business model and market projection skills.

Financial resources: No initial investment is mandatory for the implementation of this methodology in an institution that already has a consolidated structure, as in the case of most Federal Institutes and Universities in Brazil. It is possible to start taking advantage of existing room or laboratory structures and deploy/expand a physical structure step by step, in stages and according to the profile shown by the public attended. We recommend starting with a small group of incubated businesses and initially focusing on solid implementation of processes, good team training and consolidation of incubation activities as an annual cycle.

Intellectual Capital: The successful implementation and execution of a methodology, including this one, is in the full domain of it and of the knowledge that permeates it by the team that uses it. This way, it is essential that at least the following skills and knowledge are known by the entire team:

- The Methodology itself;
- Business Validation;
- Business Model Canvas;
- Prototyping of products and services;
- MVP - Minimum Viable Product;
- Pitch business presentation technique;

Table 1. Classification of factors associated with mortality

1. The entrepreneur	2. The business	3. The external environment
<ul style="list-style-type: none"> ▪ Competence in business management ▪ Industry experience ▪ Education level ▪ Professionalization of the relationship with partners 	<ul style="list-style-type: none"> ▪ Access to credit ▪ Skilled labor ▪ Strategic planning ▪ Legal and accounting support ▪ Quality of products and services ▪ Innovation in products and services 	<ul style="list-style-type: none"> ▪ Legal and fiscal bureaucracy ▪ Competition from competitors ▪ Customer demand ▪ Suppliers, representatives, distributors and partners ▪ Charge of taxes and duties

Source: Filardi et al (2012)

Table 2. Evaluation of Criterias of Selection

CANDIDATE:					
absent (1), low (2), moderate (3), high (4), very high (5)					
Criteria	1	2	3	4	5
General risk analysis performed by pre-evaluators					
Entrepreneur's description of their risk level					
What types of vulnerabilities does the enterprise face					
Description of the problems faced					
The entrepreneur's willingness to dedicate himself to the proposed solutions					
Subtotal:					
Total					

Physical and/or Virtual Structure: The methodology was designed to work 100% virtual. In environments where greater interactivity is desired and there is a demand for local incubation, we encourage the realization of some face-to-face activities and also that some space for work and study *in loco* be available for entrepreneurs. So, once we understand a little bit about the struct need, how should this methodology be deployed? We divided the implementation into 3 stages.

Phase 1 - Preparation: Awareness, planning and team preparation;

Phase 2 - Incubation: Execution of a follow-up cycle of projects that should last between 6 to 10 months.

Phase 3 - Control: Cycle evaluation, feedback analysis, analysis of next cycles and adjustments.

We suggest a period of 1 year to develop all phases of the deployment cycle. We call it a cycle, because after implementation, the same phases are repeated to offer new incubation demands. Only the points of emphasis are changed. The more knowledge and expertise you gain, the less time you have in the preparation and control phases and the more you can devote to incubation. So now, let's understand how the selection process works to assure we get companies suitable for our purpose.

The Selection Process

Some simple questions can guide us to explain some things about this process, so let's clarify:

- Who can apply?
- Enterprises that are in a risk zone (vulnerable situation) due to vulnerabilities.
- Who is responsible for running the selection?
- The business incubator.
- What's the purpose?
- The objective of the incubation process is to help individual, micro and small entrepreneurs who are in a vulnerable situation, to establish a recovery plan and/or actions to face the moment of crisis.
- How does the enrollment take place?
- Enrollments will be in a continuous flow, during the period of the project until the achievement of maximum number of business capacity.
- I was not selected in the first selection, do I have a chance?

- Yes. The incubation process lasts from 6 to 10 months, so with some business given until the 4th month, it is possible to be replaced and to invite the next company in the list.

The first step for the selection process is to fill out the application form, which has specific questions to identify the company and to verify if they are in a vulnerable situation, and if so, to classify it. Here we can see the topics of the application form:

- E-mail
- Name
- Gender of identification
- Age
- Social Security Name
- Telephone number
- Educational Level
- Does your company have an Employer Identification Number (EIN)?
- What's the size of your company?
 - Informal Entrepreneur (Does not have EIN)
 - Individual Microentrepreneur
 - Micro Entrepreneur
 - Small Company
- In what city is your business based?
- Tell us a little about your company: Why did you start this business? What motivated you and why do you want to stay in it?
- Does your enterprise have partners? If yes, how many are there?
- What is the field of activity of your company?
- How many employees work in your business?
- What is your project's average monthly billing?
- Do you have any administrative system controls?
 - No, I don't
 - Softwares
 - Cash Flow Book
 - Diary Notes
 - Spreadsheets (Example: Excel)
 - Others. Specify:
- What types of vulnerabilities is your business subject to? Check which areas you think you have problems at this time of crisis and need assistance.
 - Management
 - Financial
 - Logistic
 - Inventory
 - Information Technology
 - Personnel
 - Others. Specify:

- Write down in detail the problems faced by your business. This description will help us to verify the level of vulnerability you are in and classify the priority of your service.
- Do you have equipment for video conferencing or video calling?
 - No, I don't
 - Webcam
 - Microfone
 - Tablet
 - Smartphone

Others. Specify:

- About your interest, the time dedicated to each company is valuable and can be decisive for the people served to keep their businesses alive, so let's understand now your commitment to participate in this activity. Do you have or can you have time to participate in meetings to be scheduled by the project consultants? Each consultoria should last from 1 hour to 1 hour and 30 minutes, it will be done remotely (by video call or telephone) and preferably at night. Indicate if you can find time to be attended during this period and if not, justify why and at what time you could.
- Do you commit to complying with the activities and deadlines established by the project consultants after the service? After the appointments, the consultants will indicate plans, documents and/or activities that you must perform to assist in the establishment or recovery of your business. Indicate how much you intend to commit to this:
 - I can dedicate at least 1 hour a day.
 - I can dedicate at least 2 hours a day.
 - I will dedicate myself at least 2 hours to the maximum amount I can daily until the recovery/establishment of my business.
 - I am currently unable to commit any part of my daily time to these activities.
- Click here to submit this form and declare that you have read the rules for participation in this process and that you agree with them. You are also aware that success cases may be publicly disclosed.

So, once the companies have been applied, we must start the selection process. Is important to say that in the same page they have the form to apply, they have a link to a PDF file with all the rules including the criterias of participation and the criterias of selection. That said, let's see the first step, the criterias of participation.

Criteria of participation: In order to participate in the project, entrepreneurs must meet the following criteria:

- Be an individual or informal entrepreneur, or own a micro or small company;
- The company must be located in any city in Brazil;
- The company must be facing one or more types of the following vulnerabilities:
 - Financial;
 - Administrative/Management;
 - Logistics;
 - Inventory;
 - Information Technology;
 - Human Resources.

If the company does not meet all the three requirements it is disqualified. If yes, the company follows to the next phase, the evaluation of the criterias of selection, as we see below.

Criteria of selection: Candidates will be selected according to criteria of priority and degree of risk of the activities, considering the following items for evaluation in the evaluation table below. For each of the items a risk level will be assigned, being: absent (1), low (2), moderate (3), high (4), very high (5).

Each candidate will be evaluated for at least two consultants to ensure fairness in the process. The final note for each candidate will be the average between the two consultants' evaluation. In case of a tie, that smaller enterprise will have priority. The size of the enterprise can be characterized by its revenue, assets and number of employees, in that order. The results of the selection are disclosed through a table organized in priority order that is published in the institutional website. Resources to the results are admitted and must be sent by sending the request to a specific email. To Ativa Incubator the results of this selection process have come 100% accurate. Every time we start an incubation process we interview the entrepreneur responsible for the company selected and every of them we checked the real vulnerabilities of the business were accurate with that evaluated in the selection criterias.

Conclusion

The analysis of the vulnerability as selection criteria for entrepreneurship incubation process not only demonstrate a relevant empirical reading of the incubation process, but engender a discussion with important educational learning theories, including Behaviorism (Skinner, 2006), The Social Interactionism (Vigotsky, 2008) and Meaningful Learning (Silva, 2020). This study case showed that the selection process led by Ativa, IFMT's Business Incubator, is substantial and accurate. Using these criterias we assure to select the companies who are in real need of help and to make our role as public and social institution. Being an entrepreneur is an exercise that demands a lot, as it structures theory and practice in a constant coming and going of studies, reflection, transformation etc., fundamental to entrepreneurial learning and business success. We believe that this is a work that guides co-responsibilities. The Business Incubator process guides the entrepreneur through a path of constant learning together with the incubator. Problems are diagnosed together as well as solutions as tough together along the time the companies are in the incubation process. During this process, the entrepreneurs can reflect about how to put together study, practice and results, in a constant back and forth during the process, in order to monitor the success of the action or the need to reframe in the next action. Finally, we hope that this work will help other incubators to find out the importance of establishing a selection criteria and to focus on a specific public of companies. As future work, this analysis of selection criteria will be part of the publication release of the methodology. We would like to thank the Reach Out Chairman (Pró-Reitoria de Extensão) and Research Chairman (Pró-Reitoria de Pesquisa) of IFMT and the Research Support Foundation of the State of Mato Grosso (FAPEMAT) for their assistance.

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