



CHARACTERISTICS OF THE DIGITAL ENTREPRENEUR: A MULTICASE STUDY IN STARTUPS

CARACTERÍSTICAS DO EMPREENDEDOR DIGITAL: UM ESTUDO MULTICASOS EM STARTUPS

CARACTERÍSTICAS DEL EMPREENDEDOR DIGITAL: UN ESTUDIO MÚLTIPLE EN STARTUPS

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Cite as – American Psychological Association (APA)

Santos, E. A., & Torkomian, A. L. V. (2021, May/Aug.). Characteristics of the digital entrepreneur: a multicase study in startups. *International Journal of Innovation - IJI*, São Paulo, 9(2), 219-238.
<https://doi.org/10.5585/iji.v9i2.18562>.

Abstract

Objective of the study: Investigate what are the individual characteristics of the digital entrepreneur in startups.

Methodology/approach: a multiple case study was carried out with five startups incubated in a digital hub, using participatory observation, transcription of public information and semi-structured interviews with the leading entrepreneurs of each company as sources of evidence. The interviews were coded and analyzed based on the content analysis technique.

Originality/Relevance: Given the upward movement of digital entrepreneurship, which needs to be seen as an entirely new field of research due to the unique characteristics of the Internet, a prominent theme that needs to be investigated is the relationship between entrepreneurship and the adoption of digital platforms for creating startups in validation processes.

Main results: It was found that the main characteristics of digital entrepreneurs are related to gender, age, academic background, professional experience, and personal knowledge and skills in the chosen sector, pointing out that they can, at least so far, facilitate the success of the digital platform.

Theoretical/methodological contributions: We sought to evolve with the literature on digital entrepreneurship in the context of startups.

Social contributions/management: It is hoped that this investigation can help future digital entrepreneurs to know the necessary characteristics for this new business model.

Keywords: Entrepreneurship. Digital entrepreneur. Digital platforms. Startups.

Resumo

Objetivo do estudo: Investigar quais são características individuais do empreendedor digital em startups.

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Metodologia/abordagem: Foi realizado um estudo de caso múltiplo com cinco startups incubadas em um polo digital, utilizando como fontes de evidências a observação participativa, a transcrição de informações públicas e entrevistas semiestruturadas com os empreendedores dirigentes de cada empresa. As entrevistas foram codificadas e analisadas com base na técnica de análise de conteúdo.

Originalidade/Relevância: Dado o movimento ascendente do empreendedorismo digital, que necessita ser visto como um campo de pesquisa inteiramente novo devido às características únicas da Internet, um tema proeminente que precisa ser investigado é a relação entre o empreendedorismo e a adoção de plataformas digitais para a criação de startups em processos de validação.

Principais resultados: Constatou-se que as principais características dos empreendedores digitais estão relacionadas ao gênero, idade, formação acadêmica, experiência profissional, e conhecimentos e habilidades pessoais no setor escolhido apontando que poderão, pelo menos até o momento, facilitar o sucesso da plataforma digital.

Contribuições teóricas/ metodológicas: Buscou-se evoluir com a literatura de empreendedorismo digital no contexto de startups.

Contribuições sociais/ gestão: Espera-se que esta investigação possa auxiliar futuros empreendedores digitais a conhecerem as características necessárias para esse novo modelo de negócios.

Palavras-chave: Empreendedorismo. Empreendedor digital. Plataformas digitais. Startups.

Resumen

Objetivo del estudio: Investigar cuáles son las características individuales del emprendedor digital en las startups.

Metodología / enfoque: Se realizó un estudio de caso múltiple con cinco startups, incubadas en un polo digital, utilizando la observación participativa, la transcripción de información pública y entrevistas semiestruturadas con los principales empresarios de cada empresa como fuentes de evidencia. Las entrevistas fueron codificadas y analizadas con base en la técnica de análisis de contenido.

Originalidad / Relevancia: Dado el movimiento ascendente del espíritu empresarial digital, que debe verse como un campo de investigación completamente nuevo debido a las características únicas de Internet, un tema destacado que debe investigarse es la relación entre el espíritu empresarial y la adopción de plataformas digitales para la creación de startups en procesos de validación.

Principales resultados: Se encontró que las principales características de los emprendedores digitales están relacionadas con el género, la edad, la formación académica, la experiencia profesional y los conocimientos y habilidades personales en el sector elegido, señalando que pueden, al menos hasta el momento, facilitar el éxito. de la plataforma digital.

Aportes teóricos / metodológicos: Buscamos evolucionar con la literatura sobre emprendimiento digital en el contexto de las startups.

Contribuciones sociales / gestión: Se espera que esta investigación pueda ayudar a los futuros emprendedores digitales a conocer las características necesarias para este nuevo modelo de negocio.

Palabras clave: Emprendimiento. Empreendedor digital. Plataformas digitales. Startups.

1 Introduction

Companies that pursue traditional “product” strategies are increasingly at a disadvantage compared to companies that seek platforms that offer essential products and services that can be extended by an ecosystem of developers (Cusumano, 2010). Digital platforms are economically important and widely observed in modern economies, emerged to serve user communities, resulting in increasing technical and social complexity (Hanseth & Lyytinen, 2016).

For Baldwin and Woodard (2009), platform systems vary greatly in construction and appearance. Some are physical (a singles bar), others are virtual (a social networking site). Some platform systems are contained within a single company or in a supply chain, while others are spread across ecosystems consisting of thousands or tens of thousands of companies.

A platform is intended to consummate correspondence between users and facilitate the exchange of goods, services or social currency (Costa, 2016). This connection can be seen as creating value through a variety of companies in the internet age such as Alibaba and Amazon platforms, which connect buyers and sellers through their online marketplaces. Facebook, Instagram, Twitter, Wikipedia and YouTube have become giant media platforms not creating content but allowing users to generate content for each other.

Thus, for new business models to be developed, entrepreneurs are needed, who are creative people, marked by the ability to establish and achieve goals, and who maintain a high level of awareness of the environment in which they live, using this ability to detect business opportunities (Filion, 1999). However, in the digital age, a new terminology emerges, digital entrepreneurship, which in principle can be defined as the individual who seeks to undertake or create online ventures through opportunities offered by new digital technologies and the internet (Davidson & Vaast, 2010).

In this sense, some studies on entrepreneurship and its characteristics were prepared seeking to research whether the current entrepreneur would have the same characteristics as the traditional entrepreneur (Kuratko & Hodgetts, 1995; Philardis, Barros & Fischmann, 2014). The results showed that the current entrepreneur needs to be more qualified, know the business, have a strategic vision, organizational and communication skills, intuition, experience, flexibility, adaptability to change and know how to work in a team. Specifically, the digital entrepreneur, in addition to the characteristics inherent to the current entrepreneur, needs to keep up to date and master the technologies he uses in his business, always being attentive to the needs and desires of his customers, seeking to efficiently satisfy them using information technologies to achieve success (Pereira & Bernardo, 2016).

One of the main characteristics of the new digital business models is that companies tend to be born to act on digital platforms, which have reduced operating costs (Pereira & Bernardo, 2016). Specific organizational formats, such as startups, are able, through their digital platforms, to create experience environments in which the user connects and actively interacts with the organization (Kraus, Palmer, Kailer, Allinger & Spitzer, 2019).

Digital entrepreneurship is claimed not only as a context, but as an entirely new field of research, given the unique characteristics of the Internet (Hull, Hung, Hair, & Perotti, 2007; Nambisan, 2017). And, in the early stages of a growing field of research, exploratory studies are needed so that concepts unique to that field can emerge and pave the way for future studies. A prominent research topic within digital entrepreneurship that needs to be investigated is that of digital startups undergoing validation (Zaheer, Breyer, Dumay & Enjeti, 2018).

It can be pointed out that there are different digital entrepreneurship studies that are investigating digital startups (Spiegel, Abbasi, Zylka, Schlagwein, Fischbach & Schoder, 2016; Nambisan, 2017; Zaheer et al., 2018; Kuester, Konya-Baumbach & Schuhmacher, 2018). It is also noted that despite its importance as one of the first empirical studies on digital startups, the exploratory study by Carrier, Raymond and Eltaief (2004) was carried out in a digital reality that is very different today. Another aspect to be addressed refers to sparse Brazilian studies on digital startups (De Paiva Júnior, De Souza Martins, Da Cunha, Da Silva & De Santana, 2014; Pereira & Bernardo, 2016; Domingues, Floyd-Wheeler & Nascimento, 2017) and lack of studies investigating the characteristics of entrepreneurs who adopt digital platforms to create startups in validation processes. So, the question we want to answer is: **what are the characteristics of the startup entrepreneur allocated in Digital Poles?** In this sense, the purpose of this article is to present the individual profiles of the digital entrepreneur. This study adopted the following characteristics, based on studies of Filardis et al (2014) and Pereira and Bernardo (2016): knowing the business and the market, being qualified, having a strategic vision, organizational and communication skills, intuition, experience, flexibility, adaptability to change, teamwork and mastering technologies. Such investigation can help future digital entrepreneurs to know the necessary characteristics for this new business model.

The present work is structured as follows: after this introduction, in section 2 there is the theoretical foundation related to the themes of digital platforms, digital entrepreneurship and startups; section 3 describes the methodology used in the research, section 4 presents the analysis and discussions of the results, and finally section 5 presents the final considerations, pointing out the perspectives for future work and then, the references used are presented.

2 Theoretical foundation

In this section, the theoretical foundation that supports this research is presented. The themes in focus are the characterization of digital entrepreneurship, the definition of digital startups and some considerations about digital platforms.

2.1 Digital entrepreneurship

New information technologies have become the source of a new form of entrepreneurship known as cyber-entrepreneurship, as named in the pioneering study by Carrier et al. (2004). For them, the cyber-entrepreneur creates a company that is essentially based on electronic commerce (e-business startup), and whose main activities are based on the exploitation of networks through Internet technologies. The results of this survey shed some interesting light on a new form of business that is likely to become much more pervasive with the advent of the new economy.

In the systematic review of the literature prepared by Kraus et al (2019), in addition to different definitions of the phenomenon of digital entrepreneurship, the terminology of digital entrepreneurship is not used in all articles in the same way, and can be replaced by digital entrepreneurship, digital innovation, digital company or digital business.

In general, any entrepreneurial activity that transfers an asset, service or a large part of the business to digital can be characterized as digital entrepreneurship (Le Dinh, Vu & Ayayi, 2018). Briefly for Guthrie (2014), digital entrepreneurship generally encompasses the sale of digital products or services through electronic networks, occupying market niches, monetizing business opportunities, in addition to being innovative, radical and risk-taking (Richter, Kraus, Brem, Durst & Giselsbrecht, 2017)

Furthermore, according to Hull et al. (2007), digital entrepreneurs face many differences compared to traditional entrepreneurs, with the main differentiation criteria being products, marketing activities and the workplace.

A study conducted by Filardi, Barros and Fischmann (2014) sought to analyze the evolution of entrepreneurial characteristics based on the study by Kuratko and Hodgetts (1995) which covered the period from 1848 to 1982. A bibliographic and bibliometric research was carried out from 1983 to 2014, complementing, expanding and comparing the findings of the original research. The results showed that the current entrepreneur needs to be more qualified, know the business, have a certain daring and notion of strategy, and a series of skills not mentioned above, such as organizational capacity, intuition, experience, flexibility and strategic vision, once that in a more competitive market, teamwork, communication skills and adaptability to change are increasingly required.

In addition to these characteristics, the study by Pereira and Bernardo (2016) shows that digital entrepreneurs need to keep up to date and master the technologies they use in their

business, always being attentive to the needs and desires of their customers, seeking to satisfy them efficiently using information technologies to achieve the success of your business.

It is important to emphasize that to prevent problems from occurring during the execution of the digital business, the entrepreneur must consider some variables, choices and decisions to be taken, as Tomaz (2001, p.26) presents: “Who will be the clients that the company will answer? How will this service be? What products and services will be available? What will be the production and distribution system, the brand, the market, the location, the partners, the inputs, the suppliers, the financial resources and the technologies to be adopted? among others. Note that in the reality of the digital entrepreneur there are similarities with the execution of a traditional physical business, but the operation is totally different (Pereira & Bernardo, 2016).

However, digital entrepreneurship reveals operational challenges and limitations, since the high level of uncertainty and risk of digital business, lack of knowledge about issues related to the protection of intellectual property and difficulties in finding investors who promote this business format are some of the from barriers faced by digital entrepreneurs (Spiegel et al., 2016; Srinivasan & Venkatraman, 2018; Kraus et al., 2019).

The studies by Spiegel et al. (2016) they also reveal that new internet business models are in constant flux, continuously altered and adapted by the founders, who identify their professional social network (ie, their social capital) as an extremely important factor for the development of the business model. and, ultimately, to the success of their startups.

2.2 Digital startups

A startup is, by definition, an organization with elements of innovation, which creates new products and services and brings with it a series of uncertainties (Ries, 2011). In the beginning, the startup lacks a history and proof of its proposed action, which could result in a relevant possibility of failure (Pinto, 2017). Thus, the main objective of a startup is to learn about the validity of its own business model, recognizing that it is based on its founder’s hypotheses, and seeking to quickly validate them in order to reduce their uncertainties (Ries, 2011).

Digital startups, on the other hand, can be defined as new, high-growth innovative companies, offering products and services based on information and communication technology (MCTI, 2018).

It is considered in this study that digital startups act as a magnet for entrepreneurs motivated by opportunities, proficient in business and technical areas. Its incipient projects that

are in the planning stage (greenfield) have what entrepreneurs look for: expected high demand, high profit margins, early-stage technology lifecycles, competition density that is neither too high nor too low, and overall learning potential from others (Shane & Venkataraman, 2000).

2.3 Digital platforms

Digital platforms can be defined as virtual structures that process applications, games, media content (text, images, videos, music) available for consumption and sharing among platform users that can be accessed through digital artifacts such as smartphones and notebooks (Kallinikos, Aaltonem & Marton, 2013; Van Alstyne, Parker & Choudary, 2016).

Two-sided platforms are those companies that create a service that brings together two groups of platform customers, such as Airbnb or Uber that bring together end users and hosts (homeowners) or drivers. These platforms design a model that makes matching between sides a meaningful experience for the parties involved (Trabucchi & Buganza, 2020).

Business models for platform-based ecosystems and the main products they revolve around are still at an early stage of development, providing significant opportunities for innovation (Helfat & Raubitschek, 2018).

Thus, digital platforms can be considered as enabling elements for the growth and consolidation of digital entrepreneurship (Bessi, 2016). However, platforms are ecosystems also made up of challenges and limitations, such as difficulties in the governance of these ecosystems, which can trigger boycotts by users; unpredictability and uncertainties triggered by dependence on the success and/or failure of action on the platform; and capacity for innovation limited to the platform's features and tools. So, these factors can be considered, at the same time, inducing and limiting the role of the digital entrepreneur in the sense of generating creative actions aimed at facing business challenges on digital platforms (Welter, 2011; Zahra & Nambisan, 2011; Van Alstyne et al., 2016; Hsieh & Wu, 2019).

3 Methodology

For the purpose of investigating what the profile is from the digital entrepreneur became the Digital Pole of Mogi das Cruzes, to carry out a qualitative exploratory research, using the multiple case study method. This choice is in line with what was proposed by Yin (2010), as the case study serves to examine contemporary events and is capable of dealing with a variety of evidence. As a limitation pointed out to multiple case studies, Gil (2002) presents the impossibility of generalizing the data.

The research data collection procedures were based on notes of the researcher's observation in meetings at the digital Pole, transcription of public information available on the websites of the Brazilian Micro and Small Business Support Service (SEBRAE) and Polo, in addition to semi-structured interviews. Respondents were selected for convenience and availability, among the leading entrepreneurs of companies incubated at the Digital Pole of Mogi das Cruzes. Usually, you can have up to 10 startups incubated in this space, however, after an initial consultation, only five managers decided to participate in the research. These companies entered into incubation by the Pre-Acceleration Program "Startup SP", which has been in progress since the second half of 2019. The program lasts 10 months and is aimed at digital startups headquartered in the State of São Paulo, which are in the validation phase of the main assumptions of their business models, especially those related to the market problem, customer segments, solution, and revenue template.

The Digital Hub of Mogi das Cruzes enables startups to support startups by making available mentors, investors and partner companies, aiming to contribute to the development of skills and abilities needed by entrepreneurs, in addition to providing a physical space for those who entered into incubation for this program.

The research script was composed of two blocks: Block A, which identified the business characteristics of the cases studied (product/service provided, corporate constitution of the company, reasons for creating the company, value proposition, customer segment, main competitors); and Block B, which encompassed issues related to the sociodemographic characteristics of digital entrepreneurs (age, academic background, gender, professional experience, knowledge and personal skills in the chosen sector). It should be noted that other characteristics from the studies by Filardi et al. (2014) and Pereira and Bernardo (2016), such as organizational skills, intuition, flexibility, mastery of information technologies, teamwork and communication skills, were considered as prerequisites for being approved in the Program of Pre-Acceleration "Startup SP" and have not been studied. Adaptability to changes, attention to the needs and desires of its customers, and keeping up to date, could not be explored, as the cases are in the validation phase of their business models.

Because the incubation process was conducted by the owner/manager, an interview was conducted per company, as shown in Table 1. A confidentiality agreement was sent, indicating that the names of companies and participants would not be disclosed.

Table 1

Interview data

Interviewed (position)	Code	Description of the company	Average duration of the interview	Means of realization
Founding Partner	EXP1	Company that works in the development of tourism services platform, via bike tours.	40 minutes	In-person
Founding Partner	EXP2	Company that works in the development of a platform for business management and the like.	35 minutes	In-person
founding partner	EXP3	Company that develops educational technology platform for competitions.	40 minutes	In-person
Founding Partner	EXP4	Company that develops a child transport platform for different activities	60 minutes	Remote
Founding Partner	EXP5	Company that develops a shopping assistant platform for supermarkets.	45 minutes	In-person

Source: Research carried out by the authors.

Thus, 5 professionals were interviewed, and 4 interviews were conducted in person and only one, remotely, through Skype. All participants authorized the recording. After data collection, the interviews were transcribed and sent to the interviewees individually via email, to reinforce the credibility of the study and minimize possible biases on the part of the researchers (Creswell, 2010; Flick, 2013).

The interviews were then coded and analyzed based on the content analysis technique (Bardin, 1977): the pre-analysis that consisted of organizing the transcribed interviews, notes of observations and information from the websites in folders by case; exploration of the material where codes were assigned to each folder with the categories: business characteristics and profile of entrepreneurs; and soon after, the results of the individual analyzes were compared to each other (cross analysis) to identify potential similarities or differences (Merriam, 2009) and, finally, the evidence was confronted with the theoretical foundation in order to support the considerations undertaken.

4 Analysis and discussion of results

This section is organized to present the analysis and discussion of the characteristics of the cases (startups) and of the digital entrepreneurs inserted in the Digital Pole of Mogi das Cruzes. At first, it can be noted that despite the fact that each startup is in a different moment

or phase of validating their products, this fact ended up contributing to the enrichment of the results of this research.

Table 2 presents a summary of the characteristics of the surveyed startups, their value propositions, the customer segment in which they intend to act and the competitors identified by digital entrepreneurs.

Table 2

Characteristics of the cases

Code	Description of the company	Value proposal	Customers' Base Segment	Competitors
EXP1	Tourism service platform via bike tours	IT platform that links buyer and seller/tourist services	Serving the tourist market with personalized products	International competitors in road cycling
EXP2	Platform for business management and the like	IT system that improves the efficiency and productivity of business management and the like	Business management support and organization service, through its own IT system	Two national competitors
EXP3	Educational technology platform for contests	IT platform that links buyer and seller / educational services	Serve the educational market focused on consumers who offer contests	Competitors on a course for competitions
EXP4	Children's transport platform for different activities	IT platform that links buyer and seller / child transport services	Child transport service with real-time monitoring	Two international competitors
EXP5	Shopping assistant platform for supermarkets.	IT platform that links buyer and seller/shopping assistant	Real-time shopping assistant service through its own IT system	Various competitors in other different areas

Source: Research carried out by the authors.

It can be noted that the phenomenon of digital entrepreneurship is described as the entrepreneur's action in the online environment, in the midst of their performance on technological platforms, well represented in the cases studied. All companies are based on two-sided platforms, that is, companies that create a service that brings together two groups of customers as a value proposition.

It appears that entrepreneurs have a good knowledge of the market and customers and a certain degree of technical competence in their field, which enabled them to be participating in the Sebrae-SP program. However, Ravasi and Turati (2005) warn that, in order to realize their

ideas, it is also necessary to have financial resources, skills and competences, which can be obtained in the industrial and commercial areas and through research with partners, consultants, designers, among others.

In most companies, there is still no agreement between the partners, which is a legal document in which the responsibilities and participations in the company are formalized; when there is some agreement, it is usually only verbal. However, EXP1 and EXP3 entrepreneurs stated that they were guided by the Polo's legal mentorship to develop an agreement between the partners, which would assist in the future entry and exit of a partner and would guide the relationship with investors, who usually assess the legal security of startups before to carry out their investments according to studies by Grossman, Yli-Renko and Janakiraman (2012).

Regarding the reasons for the creation of the company, it can be seen that they are entrepreneurs by opportunity who have prior planning, already bearing in mind the growth and the strategies they will use to achieve their goals, aiming at generating profits, jobs and wealth (Dornelas, 2015). In Brazil, even in the face of a high unemployment rate, still as a consequence of the economic crisis that the country has been overcoming, according to data from Global Entrepreneurship Monitor (GEM, 2018) entrepreneurship by opportunity prevails as the main motivation to start a business. This fact can be evidenced by the EXP3, who verified that the market conditions are favorable for your business, as there is still a gap between what students know and what they need for the National High School Exam (Enem). This opportunity may facilitate entry into the digital market, with reduced costs, both for implementation and maintenance.

Table 3 presents a summary of the characteristics of the digital entrepreneurs who were interviewed, in relation to gender, age, academic background, professional experience and knowledge and personal skills in the sector chosen to work.

Table 3

Summary of characteristics of digital entrepreneurs

Code:	Gender	Age	Educational Background	Work experience	Industry knowledge and personal skills
EXP1	Male	44	Marketing	Travel agent; other entrepreneurial experiences	sports tourism
EXP2	Male	44	Sociologist and IT	IT Area; other entrepreneurial experiences	Schedule; business management
EXP3	Female	37	Master in Portuguese Language	Owner of a traditional school	Professor and academic director
EXP4	Male	37	Engineer	Mobile telephony, banking institution; other entrepreneurial experiences	Financial Management
EXP5	Male	26	High School	Franchise, call center, tapestry; other entrepreneurial experiences	Buyer; administrative management; technical consultancy

Source: Research carried out by the authors.

It can be seen in the cases studied that most are men who started the business by opportunity, while for the GEM (2018) women still see entrepreneurship as a way to supplement their income; however, EXP 3 saw an opportunity that could facilitate its insertion again in the educational market, but in a digital way, seeking to reduce costs, both in terms of implementation and maintenance.

Regarding age, they are concentrated in the age group between 37 and 44 years old, which can be considered to be composed of an adult population, usually more prone to work in a team and with greater capacity for organization and communication (Fillardi et al, 2014; GEM, 2018). Most have completed Higher Education, however, not in the technological area which could facilitate the foundation of startups. EXP5 only attended high school, and to make up for this educational gap, it set up its entrepreneurial team with two systems analysts who are developers and power the platform, as well as a senior marketing consultant.

Previous research has shown that the business owner’s experience in the same field in which a new business is started increases the company’s chances of survival and further performance (Bosma, Van Praag, Thurik & De Wit, 2004), even if such an experience does not occur. immediately before creating a startup. EXP2 is the only one that has experience in

startups, and the other four respondents worked in companies in the traditional model, noting that EXP1 and EXP3 in the same field of activity.

Please note that only EXP2 combines your expertise in business and IT, because:

[...] “I have a degree in IT, I have been working with technology for 30 years, I opened my first company in 2006 after working 10 years at a multinational, where I started to offer the same service as an outsourced company. This experience made it possible to prospect new customers to meet the market demands of this new venture”.

Rae (2006) argues that the art of entrepreneurial practice is learned only in the business environment through intuition, practice and social experience, much more than in the educational environment. You can check this fact from EXP5:

“[...] I started several higher courses at FATEC-SP, but I did not complete any. But my professional experience is extensive and eclectic, which allowed me to acquire specific knowledge that ended up helping me in my path. I worked in different fields, from industrial to services, which enabled me to acquire very rich and diverse experiences”.

The selection process carried out by SEBRAE (from the Startup SP digital startups development program) opened the classes based on a public notice, with initially 38 applicants, and after several elimination stages, they ended up choosing 20. This group participated in an event called “Demo Day”, where they presented their projects in front of a Pitch panel (made up of representatives of SEBRAE-SP and its partners) and the 10 most promising projects were chosen at the end. The process starts with the project registration, where it is verified that it meets all the requested requirements; some projects are selected after completing some stages, and then it goes through the Pitch panel. “But this whole process is very tense, and until the final decision you are very distressed; however, if it is approved, it is a relief”, pointed out the EXP2.

The entrepreneurs interviewed place great value on continuous learning, as they believe that participating in the SEBRAE program would “show the easiest way” to guide their business, avoiding the usual pitfalls. SEBRAE-s role with the Hub is making a difference for most respondents, as pointed out by EXP1:

“[...] all this knowledge that we are acquiring here with the program, if we had to pay, at least I would not be able to. These mentorships solve our doubts, for example, in the accounting field free of charge, providing all the necessary information and solutions, which would cost a lot out of here.”

Kiggundu (2002) believes that entrepreneurial education and training can be viewed from the perspective of developing entrepreneurial skills and, given its dynamic nature,

considers it important to develop specific educational programs for entrepreneurs, such as Startup SP.

In most of the cases studied, an entrepreneurial team was formed composed by the digital entrepreneur (founding partner) and a programmer to develop the platform, both with the necessary and complementary characteristics, skills and knowledge to develop the new venture (Klotz, Hmieleski, Bradley & Busenitz, 2014).

It can also be pointed that key aspects of the objectives, conception and operation of the platforms have already been delimited by the entrepreneurs. A thorough analysis of the existing scenario was prepared; the platform's objective was clearly defined initially, in consultation with the main stakeholders (users and sponsors); and that the platform's services depend on a solid database and must be designed to meet the user's needs, as recommended by Cukier, Kon and Krueger (2015).

At the time of the research, it can be seen that some managers are looking for investors for financial contributions. Many interviewees consider that the ideal investor is what they call "smart money", which is the investor who does not just bring in the money, but a person or one who is from the niche we work, or someone who wants to act with the expertise of it, also adding knowledge to the business.

It is also noted that the limitation in terms of technological resources is a reality in the enterprises surveyed, as can be seen in the following excerpt from EXP1:

"And so, when the idea of setting up a business came to me, I first started to budget how much a platform would cost, and I came across extremely high values, which I would never be able to carry out. And so, I went to check with the programmer, if he embraced this idea... He managed to develop the platform and from there, our partnership, our society was born".

Digital entrepreneurs reported that improving the platform will be an important task for the near future. To achieve this, it will be important to understand who the real users are and how they are using the platform in real life, and that between the two sides there is a meaningful experience for the parties involved, as advocated by Trabucchi and Buganza (2019).

Another concern pointed out by the interviewees refers to the emerging digital tools that are opening up new possibilities for automation and efficiency gains, as well as the provision of services. However, its development and adoption by startups requires careful planning and future investment, according to a study developed by Hsieh and Wu (2019).

In addition, many startups managed to expand and spread globally, taking advantage of the effects of the network and the power of platforms, evolving from companies with linear and direct business models to technology giants, a fact that can be considered at the time that the

companies studied have reached maturity (Trabucchi & Baganza, 2019). At the same time, many established companies were inspired by the platform paradigm to open up and seek new directions in innovation (Libert, Beck, & Wind, 2016).

5 Final conclusions

Digitization has brought a huge shift in the way entrepreneurs conduct business today. Not only business models and their various possible forms and characterizations have been shaped around digital potential; in fact, many new forms of business did also not exist until modern advances in digital technology.

The research question was answered from a multiple case study with five startups, using as sources of evidence participatory observation, transcription of public information and semi-structured interviews with the leading entrepreneurs of each company. The obtained results, analyzed from the studies by Filardi et al. (2014) and Pereira and Bernardo (2016), showed that the main characteristics were related to gender, age, academic background, professional experience, and knowledge and personal skills in the sector chosen to work, noting that they can, at least so far, facilitate the success of the digital platform. It is noteworthy that the characteristics: organizational capacity, intuition, flexibility, mastery of information technologies, teamwork and communication skills were considered as prerequisites to be approved in the Pre-Acceleration Program “Startup SP”.

It can also be identified that a feature of the platforms is the customization of their offers to specific market segments, based on an innovation proposed by the digital entrepreneur, generating an ecosystem of innovation that develops complementary products, technologies or services, which can be observed in the researched cases.

It was also found that the Startup SP program helps the validation process for the cases studied, as it provides easier conditions for startups at this stage, as well as mentoring and a network that help them at this point in their life cycle (Audretsch, Heger & Veith, 2015).

To succeed in driving a platform strategy as a digital entrepreneur, it is inevitable to uniquely place products and services on online networks that connect multiple businesses and consumers (Srinivasan & Venkatraman, 2018), which allows for very rapid business growth.

Digital platforms are a challenging object of research because of their distributed nature and their intertwining with institutions, markets and technologies. New research challenges arise as a result of the exponentially increasing scale of platform innovation, the increasing

complexity of platform architectures, and the spread of digital platforms to many different industries.

The study has as a limitation the fact that research in companies has been restricted to leading entrepreneurs, which may present biases from this perspective. As a proposal for future studies, we intend to carry out a longitudinal study with the same companies, to verify how they evolved at the end of the program, with a view to their growth and consolidation. It would also be important to carry out a study with the companies end users, verifying which would be the strategies and methods capable of stimulating participation in the innovation process of these digital products. In addition, the characteristics of adaptability to changes, attention to the needs and desires of its customers, and keeping up to date, can be explored based on the validation of their business models and the development of startups.

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