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SUCCESSFUL STARTUPS: IS THERE A COMMON FACTOR AMONG THEIR ENTREPRENEURS?

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SUCCESSFUL STARTUPS: IS THERE A COMMON FACTOR AMONG THEIR ENTREPRENEURS?

Abstract: It is challenging to define what makes a startup successful and which factors determine the success of a startup. In this paper, we have assessed the characteristics of the key individuals that run startups in Brazil to validate their profile as entrepreneurs according to SEBRAE (2018), but we could not find individual characteristics that explains what it takes to make a startup survive at least 3 years and make one sale, which we labeled as Successful startup.

Key words: Entrepreneur profile, startup, success, entrepreneurship

1. INTRODUCTION

Entrepreneurship is key for economic growth. The role of the innovative entrepreneur is precisely to break paradigms on economy markets and establishing new economic and technological features for their productive structures, aiming at professional and individual achievements and profit (Schumpeter, 1982). Brazil is not different. It is keen to promote innovative entrepreneurship in order to foster job creation, technological progress and economic development.

It is easy to name a successful startup not because they are plenty, but because we forget who did not succeed. In Brazil, only 58% of the companies were active at its second anniversary (IBGE, 2014). It is easy to fail, but success is far more complex and subjective.

For startup companies, defining success can be even more vague and complex. We have seen many promising high-growth companies that failed. Several of them even received external funding from believing savvy investors. Success of a startup is subjective and will depend on the entrepreneur's perspective and time frame.

In this paper, we define a successful startup as a startup that survived three years and completed at least one sale in this period. This definition is advantageous because it is based on two objective metrics that can be measure and represents two landmarks in the life cycle of a startup: i) the startup survived a longer period than most companies will do, and ii) the startup managed to convince a third party to acquire its services or products. Another convenience of this definition is to remain achievable to all remaining operating startups.

The purpose of this paper is to assess the profile of the entrepreneur and to identify if there are common main characteristics shared by entrepreneurs that managed to keep their startups alive for three years or more and succeeded in selling their product or service at least once in this period. Based on those shared characteristics, we should be able to assess the likelihood of other entrepreneur to complete these same achievements. We should also be able to rank the entrepreneurs/ startups based on the implied probability of surviving three years and closing a sale.

Our sample consisted exclusively of entrepreneurs, which skewed the results of the survey as expected. Whereas there are interesting differences between the sample and the entrepreneurs flagged as successful, those differences are subtle. Any preliminary conclusion one might get from the survey we have applied proved to be statistically insignificant and we were not able to depict a single factor a successful entrepreneur, as per our definition, shared in common.

The remainder of this paper is as follows: in Section 2 we review the literature available on startups, success and entrepreneurship characteristics, Section 3 we present the methodology we have used to derive our conclusions, Section 4 we depict the data and results of our analysis and in Section 5 we present our conclusions and limitations of our analysis.

2. LITERATURE REVIEW

2.1. Startup and success factors

The term startup designates a human institution to create new products and services as conditions of uncertainty (Ries, 2012) and is linked to scalable service models (capacity to increase and increase proportionality) intensive and profitable (Blank & Dorf, 2012). Innovative companies better knew the term at the turn of the century during the "internet bubble." An example of startups of this era and that have survived the bubble burst include Google, Amazon.com and Facebook.

Many studies have been conducted to define an organization's success factors, such as entrepreneurial characteristics of the company leader and its behavior (Cooper & Bruno, 1977; Duchesneau & Gartner, 1990; Watson & Scott, 1998) and their motivations (Watson & Scott, 1998). Each author defines what to be considered a success factor and not, considering that in many cases, a non-success factor doesn't mean a failure factor. Sometimes non-success can mean failure, as for Watson and Scott (1998) who considered business survival as success factor.

Duchesneau and Gartner (1990) determined successful ventures based on the company's financial returns over the twelve months prior to the survey. Successful venture were those whose gross profit exceeded thirty-five thousand US Dollars per year prior to the survey, which should be less than 10% of the company's net profit in the period. Cooper and Bruno (1977) defined the success of a company based on its sales volume. Hall and Hofer (1993) have identified that investors' main criteria to assess investment target companies combines i) the company's long-term growth opportunity, ii) the profitability of the industry in which the new venture intends to operate and iii) the analyst's confidence in the target market of the company.

Various economic theories emphasizes the entrepreneurial individual (Casson, 1982; Kirzner, 1973, 1979, 1992; Schumpeter 1934). Schumpeter in his original theory establishes the entrepreneur as an individual with a particular economic function, a sort of "solitary hero" with exceptional creativity who overcomes all barriers to innovation and endowed with a pioneering vision, intuition and extraordinary leadership. Casson (1982) views entrepreneurs as individuals, not a team, committee or an organization. Kirzner (1973) reaffirms his focus on the individual by stating that the discovery of an opportunity is a singular act occurring in the mind of an individual in an unplanned and spontaneous way.

Shane and Venkataram (2000) state that the discovery of an opportunity is a necessary but not sufficient condition for entrepreneurship. The entrepreneur has to engage and explore commercially such idea, seeking profit (Shane and Venkataram, 2000). The entrepreneur should consider the value of the opportunity versus the execution cost, considering the cost of creating something new versus exploring a product or service that already exists. The entrepreneur should engage when it makes economic sense (Amit, Mueller & Cockburn, 1995; Reynolds, 1988), which is more common when the entrepreneur has financial capital (Evans and Jovanovic, 1989).

Aldrich and Zimmer (1986) show that social network to provide resources increase the likelihood of entrepreneurship. Cooper, Woo and Dunkelberg (1989), have found that people are more likely to exploit an opportunity if they already have useful information from their previous job, since already possessing knowledge reduces the cost of opportunity. In such cases, the individual tends to assess their chances of success more positively (Cooper et. al. 1988, Palich and Bagby 1995).

Among the researches on entrepreneurial characteristics, there are studies carried out with focus on the determinants of performance of these related to the personality of the founders based on the indicator Myers-Brigggs Type (Ginn & Sexton, 1990).

2.2. External support for startup development

The main external supporters for startup's development are: accelerators, incubators and angel investors.

Considering the various growth opportunities offered by the accelerators, the fact that startups participate in one was chosen as one of the factors to be analyzed regarding the impact on the success of the enterprise. Accelerators have aspects common to incubators and angel investors, which are phenomena that also help and finance nascent ventures (Cohen and Hochberg, 2014). Therefore, accelerators would also provide many of the activities provided by incubators and angels. However, accelerators differ in a number of ways, the fundamental difference being the limited duration of accelerator programs compared to the continuing nature of incubators and angel investments. This small difference leads to many other differences, as shown in the Table 1:

Table 1. Differences between accelerators, incubators and angel investors

	Accelerators	**Incubators**	**Angel Investors**
Duration	3 months	1-5 yrs	Ongoing
Cohorts	Yes	No	No
Business Model	Investment; non-profit	Rent; non-profit	Investment
Selection frequency	Competitive, cyclical	Non-competitive	Competitive, ongoing
Venture stage	Early	Early, or late	Early
Education offered	Seminars	Ad hoc, hr/legal	None
Venture location	Usually on-site	On-site	Off-site
Mentorship	Intensive, by self and others	Minimal, tactical	As needed, by investor

Source: Cohen e Hochberg (2014)

Incubators, in general, aim to "nourish nascent ventures by protecting them from the environment, giving them space to grow in a space protected from market forces" (Cohen and Hochberg, 2014). Accelerators, on the other hand, are designed to "accelerate market interactions in order to help nascent enterprises quickly adapt and learn." Basically, accelerators differ from incubators in four important dimensions: duration, cohorts, incentives, educational programs (Cohen and Hochberg, 2014).

Angel investors help ventures primarily with investments. According to Cohen and Hochberg (2014) angel investors can be defined as individual investors who provide start-up capital investments and advice to young companies. Angel investors differ from accelerators in three main ways: in relation to the duration of support, in relation to the business model and the selection, and finally in relation to education, orientation and placement.

2.3. Characteristics of the entrepreneurial profile

Muraro and Verruck (2012), shows that although there is no unanimous definition of the characteristics of the entrepreneurial profile, there is some agreement of the main attributes (Beverland, Lockshin, 2001; Carland, 2001; Carland, 1996). Muraro and Verruck (2012)

presents the main recurring characteristics of the entrepreneurial profile, cited by most of the scholars related to this area in the Table 2:

Table 2. Main recurrent characteristics of the entrepreneurial profile

Characteristics	Reference
Autonomy and self-confidence	Malheiros *et. al* (2005); Dolabela (2002); Dornelas (2005); Filion (1999); Kilby (1971); SEBRAE (2018)
Search for opportunities and vision	Malheiros *et. al* (2005); Degen (2009); Dolabela (2002); Dornelas (2005); Filion (1999); SEBRAE (2018); Timmons (1994)
Ability to take moderate risks	Carland & Carland (1996); Degen (2009); Dolabela (2002); Dornelas (2005); Drucker (1967); Filion (1999); Mcclelland (1972); SEBRAE (2018)
Energy and commitment frequency	Malheiros *et. al* (2005); Dolabela (2002); Dornelas (2005); Filion (1999); Kuip & Verheul (2003); SEBRAE (2018)
Ability to innovate	Carland & Carland (1996); Degen (2009); Dolabela (2002); Dornelas (2005); Drucker (1967); Filion (1999); Mcclelland (1972); Schumpeter (1934)
Leadership and need for power	Malheiros *et. al* (2005); Dolabela (2002); Dornelas (2005); Filion (1999); Mcclelland (1972); SEBRAE (2018)
Obstination and need for achievement	Carland & Carland (1996); Malheiros *et. al* (2005); Dolabela (2002); Dornelas (2005); McClelland (1972); Schumpeter (1934); SEBRAE (2018)
Systematic planning	Carland & Carland (1996); Dolabela (2002); Dornelas (2005); Filion (1999); McClelland (1972); SEBRAE (2018)

Source: Adapted from Muraro and Verruck (2012)

On this basis, SEBRAE - Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Service of Support to the Small and Micro Enterprises) has developed a tutoring program called EMPRETEC, which is developed by the United Nations (UN) and promoted over 40 countries. This program seeks to develop characteristics of entrepreneurial behavior profile, as well as to identify new business opportunities (SEBRAE, 2018). The work developed by EMPRETEC identified the following characteristics of entrepreneurs presented in Table 3.

Table 3. EMPRETEC's entrepreneurial profile

Characteristics	Statement	Key Word
Opportunity search and initiative	- Is proactive, anticipates situations - Looks for opportunities to expand the business - Leverages uncommon situations to make progress	- Proactive - Expand - Leverage
Persistency	- Does not quit when challenged - Re-evaluates, insists or changes plans to surpass goals - Makes an extraordinary effort to meet goals	- Doesn't Quit - Flexible - Effort
Take Calculated Risk	- Looks for and assesses alternatives for decision making - Try to reduce probability of a mistake - Accepts moderate challenges, with reasonable chances of success	- Alternative - Error - Challenge
Demands quality and efficiency	- Continually improves the business/ products - Meets or exceeds client's expectations - Creates procedures to meet deadlines and quality standards	- Improve - Client expectation

		- Quality
Commitment	- Takes responsibility for success and failure - Works with the team to deliver results - Prioritizes relationship with clients over short term needs	- Responsibility - Teamwork - Client
Information gathering	- Gets involved with market assessment - Always investigates new products/services offerings - Consults a specialist in the decision-making process	- Market assessment - New Offering - Specialist
Goals Setting	- Targets goals that are challenging and important for himself - Has a clear long-term vision - Proposes tangible goals, with performance indicators	- Goals - Long Term - KPI goals
Systematic planning and monitoring	- Faces big challenges breaking it in phases - Quickly adapts his plans to market changes and value drivers - Monitors financial KPIs and takes them into account in the decision-making process	- Face challenges - Adapt plans - Financial KPI
Persuasion and network	- Come up with a strategy to gain support for his projects - Gather support from key people to his projects - Develops network and builds good commercial relationships	- Project support - Key people - Network
Independency and self confidence	- Trusts his own opinion more than others - Is optimistic and determined, even when confronted - Convey confidence in his own ability	- Self-aware - Determined - Ability

Source: SEBRAE (2018)

For the purpose of this paper, we have considered EMPRETEC entrepreneur profile SEBRAE (2018), which is consistent with Muraro and Verruck (2012) approach.

3. METHODOLOGY

3.1. Sample selection and the Survey

Considering the research objective - identify if there are common main characteristics shared by successful startup entrepreneurs – we chose a qualitative-quantitative approach that allows gauging through a sample what are the characteristics, actions or descriptive opinions of a target population (Freitas et al., 2000).

The survey presented is used in conclusive quantitative research of a descriptive character whose main purpose is to describe a phenomenon or singularity related to the research object (Gil, 2008; Marlhorta, 2006).

For the development of this research, the survey elaborated was adapted from the forms prepared by the Brazilian Service of Support to Micro and Small Enterprises (SEBRAE, 2018) as well as contributions and theoretical underpinnings in the several authors cited throughout the literature review: Ries (2012), Blank & Dorf (2012), Casson (1982), Kirzner (1973), Kirzner (1979), Bygrave & Hofer, (1991), Shane e Venkataram (2000), Cohen & Hochberg (2014), Harada (2003), Vicenzi & Bulgacov (2013), Dourado (2017), Machado & Gimenez (2000), Santos (2002) and Batistella et al (2012).

In order to improve the research procedure (Babbie, 1999), the questionnaire was pre-tested prior to its official distribution with 10 startup entrepreneurs. According to Malhotra (2006), the pre-test consists of a test of the questionnaire with a small sample of interviewees, in order to identify and eliminate potential problems.

The survey had 61 questions divided in 7 pages and took, on average, 11 minutes to be completed. The survey comprised the following sections: understanding the startup (name, foundation date, stake ownership, first sale, revenue expectation); the entrepreneurial profile (the EMPRETEC profile); the individual profile (past experience, contribution to the startup, number of dependents); startup support (accelerators, incubators, angel investor); commitment to entrepreneurship (would open a new startup, would work for competition); and qualification of the entrepreneur (name, age, education).

In order to evaluate the characteristics of entrepreneurs proposed by the EMPRETEC program we have used a 1-10 scale, being 1 for totally disagree and 10 for totally agree for each characteristic. We have also transformed some affirmative sentences in negative sentences to force the respondent to evaluate the question before answering, avoiding automatic, non-meaningful, responses.

For purposes of comparison, we have translated those negative sentences into affirmative sentences from EMPRETEC entrepreneur profile. For example, "Doesn't quit when challenged" became "Quit when challenged", which forced responses ranging from 1-4 in disagreement. We have translated this back to "Doesn't quit when challenged" with grades ranging from 6-10.

IBEVARLab is an initiative from IBEVAR – Instituto Brasileiro de Executivos de Varejo & Mercado de Consumo - Brazilian Institute of Retail and Consumer's executive, in a free translation - dedicated to promote and facilitate any startup that operates in the Retail & Consumer ecosystem, fostering network among them and with retailers (IBEVAR, 2018).

We have approached the startups associated with IBEVARLab, reaching almost 80 startups that operates in the Retail & Consumer ecosystem. We have also included other startups of our relationship, and the startups that we were able to connect through LinkedIn expanding the survey to 400 executives. We have attended a congress in order to approach additional startups' executives without success because we were censored by the organization. After repeated follow-up and continued insistency, we have collected 106 responses from June 10th, 2018 until July 10th, 2018.

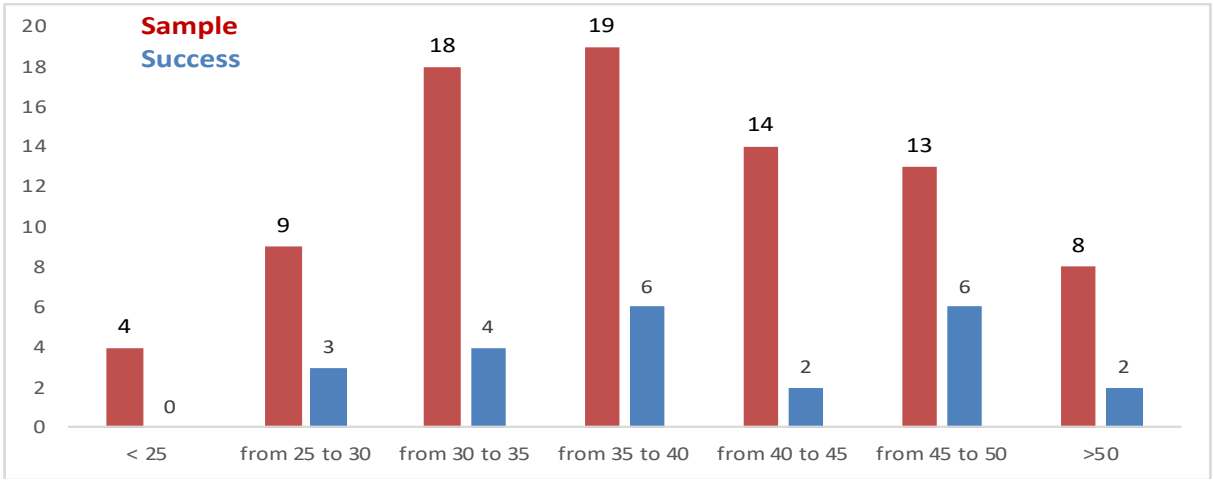
We have used SurveyMonkey electronic form to apply the survey and email for communicaiton. Mobile survey proved to the most effective way to apply the survey, followed by LinkedIn messaging. Our personal relationships and personal approach were instrumental in collecting the responses to the survey. The first email introducing our research with a link to the survey was sent to members of IBEVARLab and several startup entrepreneurs of our relationship totalizing 144 emails. We have created another link to the survey that was sent to the IBEVARLab's WhatsApp Group and to other entrepreneurs of our relationship via WhatsApp, yielding another 77 responses. We have also created two additional links to the survey that were sent via LinkedIn to approximately 300 entrepreneurs that we were not yet connected, yielding 16 responses; and to some 50 entrepreneurs in our relationship, that were not approached before, that yielded 9 responses. The QR code we used to approach the entrepreneurs in the congress until we were stopped by the organization was never used.

Out of the 106 responses we have collected, we have excluded 16 that were incomplete, and another 4 that did not qualify because they were one employee, one company that was older than 10 years and two non-Brazilian startups yielding a total qualified sample of 86 entrepreneurs. Among those, 30 were working in Startups that were 3 years or older, of which 28 have also completed a sale in this period and labeled successful startups, or 33% of the qualified sample – the Successful sub-group.

3.2. Results analysis and discussion

The age of the entrepreneurs in our qualified sample averages 39,6 years-old, ranging from 21-61 years-old. The Successful Group averages 39,4 years old, ranging from 26,5-56,4 years-old. As depicted in Chart 1, there is no apparent pattern either groups. The average age of the entrepreneur in our sample is in line with the 41.9 years-old entrepreneur's age has observed in their research of 2.7 million company founders who hired at least one employee between 2007 and 2014 (Azoulay et. al., 2018).

Chart 1. How old is the entrepreneur?



Source: Authors

Approximately 80% of the entrepreneurs were from the states of São Paulo or Rio de Janeiro depicting a bias toward the SP-RJ axis, derived from or relationships and who have we followed-up with most energy.

Most of the startups have clients in the Retail and Consumer sector, or operate in the Retail Ecosystem: 71% of the sample and 75% of successful startups. Most companies have already completed their first sale, mainly in the first year of operation: 71% of the sample and 79% of successful startups. The first client is irrelevant for both startups in the sample and the control group. Most companies were optimistic about 2019 sales and growth prospects: 91% of the sample and 89% of the successful startup expected 2019 sales higher than 2018's.

Chart 2. How much does the first client represent on current sales?

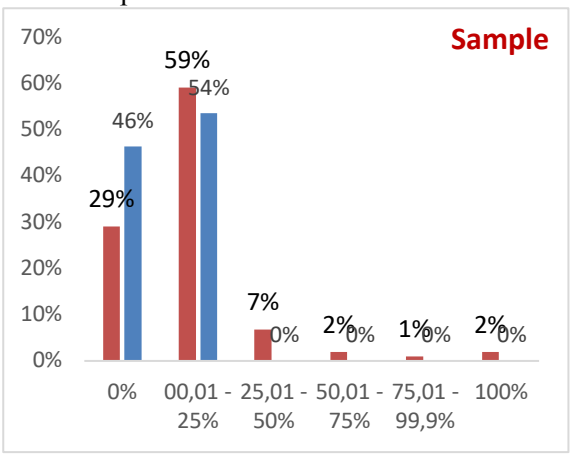
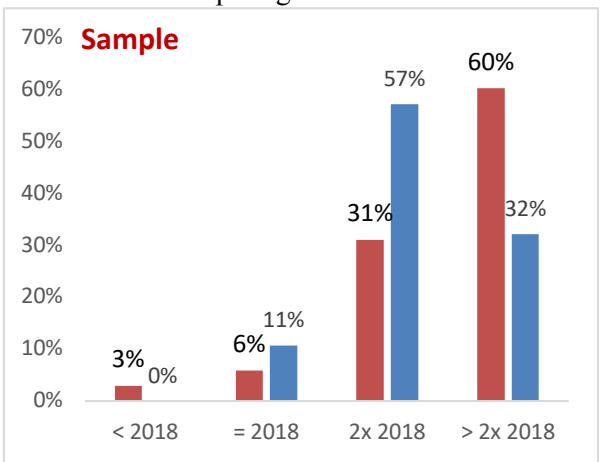


Chart 3. How much will the startup grow in 2019 comparing with 2018?



Source: Authors

Table 4. Qualified sample versus Successful sub-group

	Sample	Successful	Significance	
	3,5	4,4	52%	startup years, on average
	53%	50%	-9%	are controlling shareholders
	27%	32%	n.m.	are part of IBEVARLab
	71%	75%	n.m.	are part of the Retail Ecosystem
	85%	100%	49%	have completed a sale
*	71%	79%	21%	have completed a sale in the first year
	88%	100%	n.m.	have less than 25% of sales from the 1st client
	91%	89%	n.m.	expects to post higher sales in 2019 compared to 2018
	31%	25%	n.m.	Have already participated in a company that offers similar services or products
	69%	64%	n.m.	Have any past experience with the products or services offered by the startup
	72%	71%	n.m.	are from SP
	7%	11%	n.m.	are from RJ
	8%	4%	n.m.	are from MG
	2%	0%	n.m.	are from BA
	10%	14%	n.m.	are from other states
	39,6	39,4	-3%	entrepreneur years on average
	57%	50%	n.m.	have a strategy role
	23%	29%	n.m.	have a commercial role
*	58%	67%	n.m.	are married
*	47%	37%	n.m.	have at least one dependent
	64%	59%	n.m.	have more than an undergrad degree
	31%	25%	n.m.	have participated in another business before
	41%	43%	n.m.	have had support from third-party investor

Source: Authors

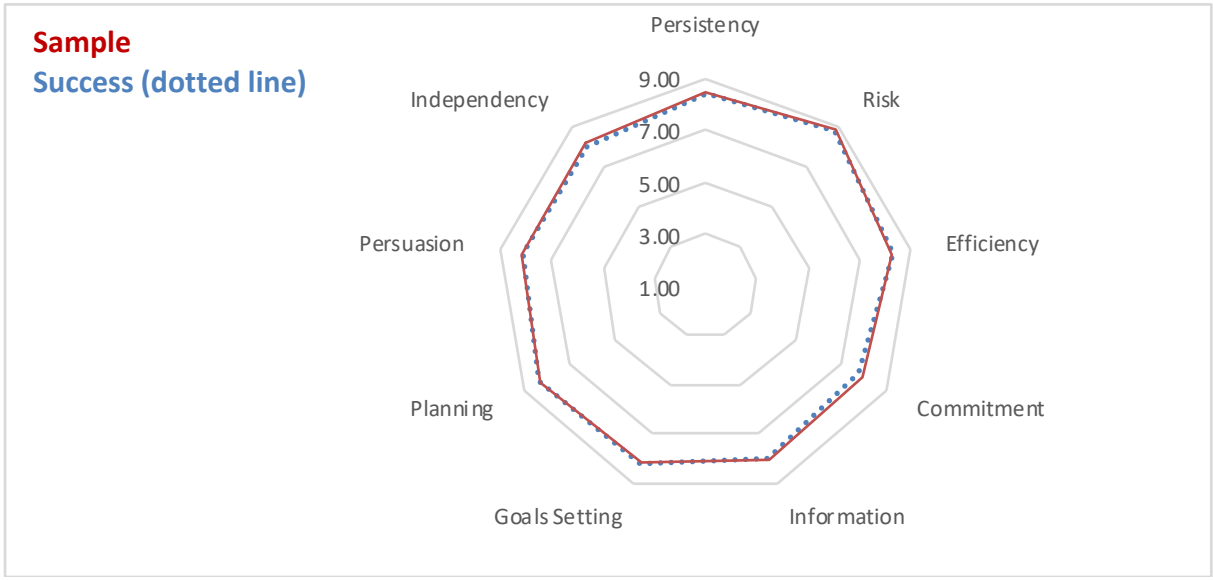
Note: Sample is the average of the Qualified Sample or the frequency of the variable considering the sample. Successful is the average of the Successful Group or the frequency of the variable considering the Successful Group.

69% of the Qualified sample and 64% of the Successful sub-group have past experience with the products or services offered by the startup. This past knowledge is key to reducing the opportunity cost and maximizing the longevity of the startup, as depicted Cooper, Woo and Dunkelberg (1989).

Comparing the Qualified sample versus Successful sub-group, it seems to be relevant to complete a sale in the first year. We also observed that most successful entrepreneurs are married, but they have, on average, less dependents. These observations derive our first set of hypothesis.

The entrepreneurial profile of the respondents confirms SEBRAE (2018) criteria for defining the ideal entrepreneur. The high average grades we have collected classifies the whole sample as entrepreneur. This either validates our sample (if you assume the test is valid) or validates the test (if you assume the sample is consistently comprised of entrepreneurs). The qualified sample and the Successful Group have extremely high and similar average grades, 8.3/10 and 8.2/10, respectively. Analyzing each macro characteristic individually reaches similar conclusions, as depicted in Chart 4.

Chart 4. The entrepreneurial profile



Source: Authors

It requires a detailed analysis to understand a subtle difference between the qualified sample and the Successful Group. We have calculated the Significance of the difference between the grades of the Qualified Sample and The Successful Group by comparing it to the dispersion of the Qualified Sample. Significance is calculated as follows:

$$\text{Significance} = (\text{Grade}_{\text{Success}} - \text{Grade}_{\text{Sample}}) / (\text{Standard Deviation of the Qualified Sample})$$

Significance measures how many standard deviations Success is different than Sample. Arbitrarily focusing on differences of 15% or more, three characteristics stands out: Client, Project Support, and Self-aware, in which the Successful Group has lower grades than the Sample. It suggests that the Successful entrepreneur is i) concerned, but less concerned about client relationship compared to short term goals; ii) concerned, but less concerned about strategies to gain support to their projects; and iii) confident, but less confident than the average about his own opinion. These observations derive our second set of hypothesis.

Table 5. The entrepreneurial profile

	Sample	Successful	Significance	
	7,8	7,5	-14%	Don't quit
	8,5	8,6	5%	Flexible
	9,0	9,2	12%	Effort
	8,4	**8,4**	**-1%**	**Persistency**
	8,7	8,6	-6%	Error
	9,0	8,9	-8%	Alternatives
	9,0	8,9	-5%	Challenges
	8,8	**8,8**	**-7%**	**Risk**
	8,9	9,0	7%	Improve
	8,0	8,0	3%	Client expectation
	7,9	7,9	2%	Quality
	8,2	**8,3**	**5%**	**Efficiency**
	9,1	9,0	-12%	Responsibility
*	6,8	6,5	-15%	Client
	8,0	**7,7**	**-20%**	**Commitment**
	8,9	8,8	-9%	Market assesment
	8,4	8,5	2%	New offerings
	6,9	6,8	-7%	Specialist
	8,1	**8,0**	**-8%**	**Information**
	8,4	8,4	4%	Goals
	8,3	8,2	-7%	Long Term
	7,9	8,0	6%	KPI goals
	8,2	**8,2**	**4%**	**Goals Setting**
	8,4	8,5	9%	Face challenges
	8,6	8,8	11%	Adapt plans
	7,9	7,8	-5%	Financial KPIs
	8,3	**8,4**	**6%**	**Planning**
*	8,2	7,8	-20%	Project support
	8,0	7,8	-9%	Key people
	8,4	8,6	11%	Network
	8,2	**8,1**	**-10%**	**Persuasion**
*	6,6	6,3	-19%	Self-aware
	9,0	9,1	7%	Determined
	8,8	8,8	0%	Ability
	8,1	**8,0**	**-10%**	**Independency**

Source: Authors

4. HIPOTESIS DEVELOPMENT

Even though our Qualified Sample is comprised exclusively of entrepreneurs, who have very similar characteristics, especially in terms of the Entrepreneurial Profile, we have identified some subtle differences between the Qualified Sample and the Successful Group.

Our goal is to test if we can derive a multivariable regression that can determine if an entrepreneur belongs to the Successful Group. It is important to highlight that not being in the Successful Group does not mean failure, but rather that the success factor has not been fulfilled yet.

Although we are interested in all variables and their correlations, we have derived the following hypothesis, some of them counter intuitive:

H1: Completing a sale in the first year is positively correlated with Success?
H2: Being married is positively correlated with Success?
H3: No dependent is positively correlated with Success?
H4: Prioritize client over short-term goals is negative correlated with Success?

H5: Strategize to gain support to your projects is negatively correlated with Success?
H6: Being confident about his own opinion is negatively correlated with Success?

We have run a logit regression at IBM SPSS Statistics software having Success as dependent variable, and one variable for each hypothesis to be tested. As depicted in Table 6, none of the variables explains the dependent variable Success with statistical significance.

Table 6. Success versus various variables run at a logit regression using IBM SPSS

Model fitting information

Model	Model Fitting Criteria -2 Log Likelihood	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept Only	107.147			
Final	73.640	33.507	26	.148

Likelihood ratio tests

Effect	Model Fitting Criteria -2 Log Likelihood of Reduced Model	Likelihood Ratio Tests Chi-Square	df	Sig.
Intercept	73.640[a]	.000	0	.
1st year sale	74.209	.569	1	.451
Married	74.396	.756	1	.385
No dependents	73.781	.141	1	.707
Client expectation	76.212	2.572	6	.860
Project support	88.446	14.806	9	.096
My opinion	85.363	11.723	8	.164

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Source: Authors

We have run different information trees and additional logit regressions using different variables with the same result. We were not able to identify any variable that was statistically relevant in explaining success, as we have defined. We have done a sensitivity analysis changed the definition of Success, increasing and decreasing the survival period of 3 years with the same results previously.

5. FINAL CONSIDERATIONS AND LIMITATIONS

Our study validates SEBRAE (2018) and Malheiros et. al. (2015) main characteristics of an entrepreneur. These characteristics, however, do not necessarily reflect the unique profile of a startup that has survived over 3 years and have completed at least one sale in this period, which we labeled as Successful Entrepreneurs for this work.

Additional characteristics such as age, past experience, percentage ownership in the company and number of dependents, to name a few, did not add information that explained a Successful Entrepreneur. We were not able to identify any individual characteristic that would explain Success, as we have defined, with statistical significance. Startup longevity seems to be a much more complex investigation problem that probably depends on additional factors other than the characteristics of the individuals behind it.

Our analysis is limited by the size of the sample and the size of the sub-group qualified as Successful. Our sample is not random, imposing the limitations of a sampling by convenience, despite the fact that we have tried to reach all individuals that could be qualified as startup entrepreneur, our universe for analysis. Another limitation comes from the fact that we observed some concentration in the retail & consumer ecosystem, an evidence that fintecs and healthcare startups are under-represented in our sample.

This paper should be considered an initial investigation. One could expand the survey to include additional entrepreneurs, which we expect will improve the quality of the result. In this analysis, we have excluded entrepreneurs from other countries. One could expand the survey

to other countries in Latin America, for example, in order to do a cross section analysis. So, we could enable to access different entrepreneurs characteristics between countries.

A further improvement would be the collection and analysis of financial and operational quantitative data of startups to measure their business performance and the entrepreneur profile. This is expected to be very challenging due to confidentiality issues, but we expect it to worthwhile. Another alternative would be to expand our research looking for other characteristics that could help to explain success.

6. REFERENCES

Aldrich, H., Zimmer, C. (1986). Entrepreneurship through social networks. In D. Sexton, & R. Smilor (Eds.), *The art and science of entrepreneurship* (pp. 3–23). Cambridge, MA: Ballinger.

Amit R., Muller E, Cockburn I. (1995). Opportunity costs and entrepreneurial activity. *Journal of Business Venturing*, vol. 10, issue 2, 95-106

Azoulay, P.; Jones, B. F.; Kim, J. D.; Miranda, J. (2018). Age and High-Growth Entrepreneurship (April 2018). NBER Working Paper No. w24489. Available at SSRN: https://ssrn.com/abstract=3158929

Babbie, E. (1999). *Métodos de pesquisas de Survey*. Belo Horizonte: UFMG.

Baker, M. & Ruback, R. (1999). Estimating Industry Multiples. Working paper, *Harvard University*, Cambridge.

Battistela, L. F.;Wittmann, M.L.; Casasola, F.P.; Sales, E.S. (2011). A experiência vivida da falência: o ser-falido e suas múltiplas derrotas. In: *XIV SEMINÁRIOS DE ADMINISTRAÇAO – SEMEAD*. São Paulo, 2011. Anais... São Paulo: SEMEAD, 2011.

Blank, S., Dorf, B. (2012). "*The startup owner's Manual: the step by step guide for building a great Company*". 1es. California: K&S Ranch Press, 2012.

Bygrave, W. D., & Hofer, C. W. (1991). Theorizing about entrepreneurship. *Entrepreneurship Theory and Practice* , 16 (2), 13-22.

Carland, J.A.; Carland, J.W. (1996). *The Theoritetical Bases and Dimensionality of the Carland Entrepreneurship Index*. In: PROCEEDINGS OF THE RISE CONFERENCE, 1996, University of Jyväskylä, Finlândia, p.1-24. Anais. Jyväskylä,

Casson, M. C. (1982). *The Entrepreneur: An Economic Theory*. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship. Retrieved from: https://ssrn.com/abstract=1496173

Cohen, S., Hochberg, Y. V. (2014), *Accelerating Startups: The Seed Accelerator Phenomenon* Retrieved from: https://ssrn.com/abstract=2418000 or http://dx.doi.org/10.2139/ssrn.2418000

Cooper, A. C; Bruno, A. V.(1977). "Success among High- Technology Firms". *Business Horizons*.

Cooper, A. C., Woo, C. Y., & Dunkelberg, W. C. (1988). Entrepreneurs' perceived chances for success. *Journal of Business Venturing*, 3(2), 97–108. https://doi.org/10.1016/0883-9026(88)90020-1

Cooper, A. C., & Woo, C. Y. (1989). *Entrepreneurship and the* Size of Firms, 317–332.

Degen, R. J. (2009). *O empreendedor: empreender como opção de carreira*. São Paulo: Pearson.

Dolabela, F. (2002). *O segredo de Luísa*. 14.ed. São Paulo: Cultura Editores Associados.

Dornelas, J.C.A. (2005). *Empreendedorismo: transformando ideias em negócios*. 2.ed. rev. e atual. Rio de Janeiro: Elsevier.

Dourado, C.S.V. (2016) *Empreendedorismo materno: a importância do comércio eletrônico na viabilidade de novos negócios gestados por mães*. Dissertação (Mestrado em Mestrado em Desenvolvimento e Gestão Social) - Universidade Federal da Bahia.

Drucker, P.F. (1967). *The effective executive*. New York: Harper & Row.

Duchesneau, D. A.; Gartner W.B. (1990). "A profile of new venture success and failure in an emerging industry". *Journal of Business Venturing*.

Evans, D. S., Jovanovic, B. (1989). An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. *Journal of Political Economy*, August, 97(4), pp. 808-27.

Filion, L.J. (1999). Empreendedorismo: empreendedores e proprietários-gerentes de pequenos negócios. *RAE – Revista de Administração de Empresas*. São Paulo, p.05-28, abr./jun.

Freitas, H., Oliveira, M., Saccol, A. Z., & Moscarola, J. (2000). O método de pesquisa survey. *Revista de administração*, 35(3), 105-112.

Gil, A. C. (2008). *Métodos e técnicas de pesquisa social*. 6.ed. São Paulo: Atlas.

Ginn, C. W., & Sexton, D. L. (1990). A comparison of the personality type dimensions of the 1987 Inc 500 founders/CEOs with those of slower-growth firm. *Journal of Business Venturing*, 5, 313–326.

Hall, J.; Hofer, C. W. (1993). "Venture Capitalists decision criteria in new venture evaluation". *Journal of Business Venturing*.

Harada, N. (2003). "Who succeeds as an entrepreneur? An analysis of the post-entry performance of new firms in Japan". *Japan and the World Economy*, Vol. 15, pp. 221-222.

IBEVAR (2018). *IBEVARLab*. Retrieved from https://www.ibevar.org.br/vitrineibevarlab

IBGE (2014). *Pesquisa Demografia das Empresas*. Retrieved from https://www.ibge.gov.br/estatisticas-novoportal/economicas/comercio/9068-demografia-das-empresas.html?=&t=o-que-e

Kilby, P. (1971). *Entrepreneurship and economic development*. New York: Free Press.

Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago and London: The University of Chicago Press.

Kirzner, I. M. (1979). *Perception, Opportunity, and Profit: Studies in the Theory of Entrepreneurship*. Chicago: University of Chicago Press.

Kirzner, I. M. (1992). The Meaning of the Market Process: Essays in the development of Modern Austrian Economics. London & New York: Routledge.

Kuip, I.; Verheul, I. (2003). *Early development of entrepreneurial qualities: the role of initial education*. International Journal of Entrepreneurship Education. Vol. 2, n. 2, p. 203-226.

Machado, H. P. V.; Gimenez, F. A. P. (2000). Empreendedorismo e diversidade: uma abordagem demográfica de casos brasileiros. *Anais do I EGEPE*, p. 132-143, out.

Malhotra, N.K. (2006). *Pesquisa de marketing: uma orientação aplicada*. 4.ed. Porto Alegre: Bookman

Malheiros, R. C. C.; Ferla, L. A.; Cuha, C. J. A. (2005). *Viagem ao mundo do empreendedorismo*. 2. ed. Florianópolis: LEA.

Mcclelland, D. C. (1972). *A sociedade competitiva: realização e progresso social*. Rio de Janeiro: Expressão Cultural.

Muraro, R.; Verruck, F. (2012) *Criação De Instrumento Para Avaliação De Perfil Empreendedor Em Meio Acadêmico*. (ABEPRO, Ed.) XXXII ENCONTRO NACIONAL DE ENGENHARIA DE PRODUCAO. Anais...Bento Gonçalves: ENEGEP.

Palich L., Bagby D. R. (1995). Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, vol. 10, issue 6, 425-438.

Reynolds, L. (1988). Entrepreneurial management in the public sector. *Management Review*, 77(5): 34-7.

Ries, E. (2012). "*A Start up Enxuta: Como os empreendedores atuais utilizam a inovação contínua para criar empresas extremamente bem-sucedidas*". 1° Edição. Editora Leya.

Santos, B. (2002). *Produzir para viver: os caminhos da produção não-capitalista*. Rio de Janeiro: Record.

SEBRAE (2018). Empretec. *Comportamento empreendedor*. Retrieved from http://www.sebrae.com.br/sites/PortalSebrae/Programas/conheca-as-caracteristicas-empreendedoras-desenvolvidas-no-empretec,d071a5d3902e2410VgnVCM100000b272010aRCRD

Schumpeter, J.A. (1934). *The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle*. New York, N.Y.: Oxford University.

Schumpeter, J. A. (1982). *Teoria do desenvolvimento econômico: uma investigação sobre lucros, capital, crédito, juro e ciclo econômico*. São Paulo: Abril Cultural.

Shane, S., Venkataraman, S. (2000), The promise of entrepreneurship as a field of research, Academy of Management. *The Academy of Management Review*.

Timmons, J.A. (1994). *New Venture Creation: Entrepreneurship for 21st Century*. Chicago, IL: Irvin, 4th ed.

Vicenzi, S. E., & Bulgacov, S. (2013). Fatores motivadores do empreendedorismo e as decisões estratégicas de pequenas empresas. *Revista de Ciências da Administração*, 15(35), 208-221.

Watson, K.; Scott, S. H., Wilson, N (1998). Small business start-ups: success factors and support implications". *International Journal of Entrepreneurial Behavior & Research* 4 (3), 217-238