

Analyzing investment decision criteria for blockchain startups

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ABSTRACT

Since blockchain's first appearance in 2008, the interest in and capabilities of the technology have increased rapidly. With that also the interest to invest in blockchain technology and to invest in its startups began to grow. But where the literature and research about venture capitalists investment decision criteria go back to decades ago, there is little known about the most appropriate investment criteria for the blockchain space, since the technology and market for it is so young. This paper will try to find differences between how blockchain startups and investors in blockchain startups weigh investment criteria. These differences can be anticipated to by blockchain startups to better correspond to the investment criteria investors in blockchain find important, and investors can use this information to analyze the investment criteria where blockchain startups lack in generally first to save time in the screening process. The focus will be set and the conclusion will be based on whether the jockey or the horse is the most important factor in the blockchain space, that is respectively whether the management team or the business is the most important factor for investors to invest (however, in this research more features are added). The results give reason to assume that investors think different investment criteria are important with regards to the phase of where the startups finds itself in. Other analyses during the research were that of why some sectors receive so much more funds in the blockchain space in comparison with other sectors: reasons that correspond to the risk/reward ratio of the market, and motives and goals of investors, two reasons that are interrelated to each other. This paper therefore provides an overview of the key criteria that blockchain startups should focus on in the blockchain market, and investors should take into account in their screening process.

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Keywords

Blockchain startups, investors, venture capitalist (VC), investment criteria, jockey and horse, individual, organization, environment, and process,

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1. INTRODUCTION

This article encompasses the findings of a qualitative research on investment decision criteria (hereafter: investment criteria) analyzed on blockchain startups and blockchain investors (hereafter: investors). Because blockchain and the first cryptocurrency Bitcoin were invented in 2008 (Zhao, Fan, & Yan, 2016), (Zhu & Zhou, 2016) and the first Initial Coin Offering (ICO) took place in 2013 (Boreiko & Sahdev, 2018) the market is still very young relative to other markets where venture capitalists (hereafter: VCs) have their investment criteria settled and ready with a lot more accuracy to predict the success of a venture than in the blockchain market. Therefore, an analysis and research-backed set of investment criteria could come in handy for investors in this market, but also for blockchain startups. The goal of the research is to find differences in the importance blockchain startups and investors place on investment criteria. Hopefully, the results can be used by blockchain startups to adjust their selves to what investment criteria are deemed to be the most important by investors.

The importance of taking into account investment criteria as a startup can be traced back to research by Sandberg (1986); Kunkel and Hofer (1990) and Timmons (1990), who explained that ventures backed by venture capital have a higher survival rate relative to ventures that are not VC-backed (Monika & Sharma, 2015). Also the success rate of VC-backed ventures is significantly higher than those of new ventures that are not VC-backed (Hall & Hofer, 1993). Research even explains that of all startups, 75% fail: the common rule is that out of 10 startups, 3 or 4 fail completely, another 3 or 4 startups are able to return their initial investment and the remaining 1 or 2 are able to produce substantial returns. 95% of the startups even fail to see their projected return on investment (Gage, 2012). Since startups are obliged to present their business plans when searching for investors, meeting the investment criteria investors find important is obviously very useful to increase the chance of receiving funds (Chen, 2018) and therefore their chance of survival and success.

From all business proposals venture capitalists receive for investment, 60% gets rejected in the first phase, 40% gets sent through for a more detailed analysis, after which 25% sees itself rejected. The remaining 15% are exposed to complex research. 5% of the proposals is eventually considered to be suitable for investment, for which the last phase of negotiation is entered. Venture capitalists eventually invest in less than 3% of all the proposals (Simic, 2015). Meeting the key criteria at the end of this research could increase the chances for startups to pass the first phase (Simic, 2015).

To pursue the goal of this research, a survey was created that will tell how blockchain startups and investors weigh investment criteria and see if there are any significant differences. These differences will be explained through a model designed by Gartner (1985): the model for new venture creation, which will be used to display what the most important investment criteria are for both parties. This model of four variables is split into groups of two which will explain what the most important factor is for the blockchain market: the jockey, or the horse. As will be explained in the following sections, these two factors come back in a lot of literature and VCs have a hard time determining what the most important factor is. The jockey is in a lot of literature referred to as the management team and the horse as the business (Kaplan, Sensoy, & Strömberg, 2009) and deciding the most important factor can narrow down and facilitate the adjustments startups have to make to the investment criteria investors find important. As said, in this research these factors consist out of 4 variables and this dilemma is the core of this research.

2. VENTURE CAPITAL INVESTMENT DECISION CRITERIA LITERATURE

2.1 Overview

Venture capital is a type of private equity that focuses on investing in startups: mostly high-tech, new, small- and medium sized, high-growth companies (Simic, 2015). In their decision making process, there are five steps VCs use for investing which come back in a lot of studies. These are 1) deal originating, 2) deal screening 3) deal evaluation, 4) deal structuring and 5) post-investment activities, also called: venture evaluation criteria. In this research the focus is set at step 2 where the investment criteria are covered. In this phase proposals get rejected based on investment criteria. With the investment criteria, venture capitalist have to find out the economic value of the new venture, which is seen as the most complex task in the decision-making process (Monika & Sharma, 2015). Venture capitalist investment criteria are criteria that venture capitalists use to make venture investment decisions. Venture capitalists themselves are pretty successful in determining ventures that will be successful and researchers accredit this to these investment criteria they use (Hall & Hofer, 1993). Meeting these criteria will therefore not only lead to a higher success rate for startups because these criteria are a format for success, but also increase their success rate because meeting these criteria will result in an increase of investments startups receive (rule 1). This was already explained in the introduction, where it is said that VC-backed ventures have a significantly higher success rate than those that are not VC-backed. Keep this rule in mind throughout the paper, because it explains an interconnected relationship in this research. To apply to this rule, investment criteria have to be met first and to meet these criteria is to find these criteria. The problem, which is exactly the core of this research, is that there is a lot of confusion about what the key investment criteria are for investors. VCs try to invest in ventures that have strong management as well as strong businesses (Kaplan & Strömberg, 2005), but different VCs at the same time claim to weigh one above the other more heavily. Then there are other VCs who think the market and the company's business are key determinants of success. This debate can be identified as whether an investor should bet on the jockey (management) or the horse (business/market) (Kaplan, Sensoy, & Strömberg, 2009) and will be used as the main subject to make a distinction between the most important factor for the blockchain market.

Rule 1: Meeting investment criteria → higher chance of success → attractive for investments to investors → receiving more investments → higher chance of success.

2.2 Jockey versus horse debate

According to Macmillan *et al.* (1985) it is the quality of the entrepreneur that eventually decides whether venture capitalists invest or not. From the top ten key criteria, five of them involve entrepreneur's experience or personality: "there is no question that irrespective of the horse (product), horse race (market), or odds (financial criteria), it is the jockey (entrepreneur) who fundamentally determines whether the venture capitalist will place a bet at all" (MacMillan, Siegel, & Narasimha, 1985). However, according to Kaplan *et al.* (2009), VCs should bet on the horse (business) instead of on the jockey (management). The reason for this is that often when a business goes public, it rarely changes or makes a huge difference to its business plan. It seems necessary to have an initial strong business if a company wants to succeed. In contrary, when a part of management gets replaced, firms are still able to go public. This suggests that it is not hard for VCs to find replacements or improvements for management. A unique business idea can prevent the business from failure or imitation and therefore management should be put

on the second place relative to the organization itself (Kaplan, Sensoy, & Strömberg, 2009).

2.3 Investment criteria

It is very common to have contrary opinions regarding what the most important investment criteria are and they are therefore very hard to establish. According to Simic (2015), out of all the venture capitalist investment criteria there has not been a research that can come to a conclusion on what the most important investment criteria are. According to Callegati et al. (2005), investors have different goals and will therefore use different investment criteria before approving any funds. The goal of this research is therefore to draw a general conclusion on what investment criteria blockchain startups and investors think are important.

3. GARTNER'S MODEL FOR NEW VENTURE CREATION

3.1 Overview

Simic (2015) claims that there are five basic categories of investment criteria. These are: the entrepreneur/team characteristics, financial characteristics, service/product characteristics, market characteristics and other characteristics. To ensure my model is complete, all these categories are covered and divided in a group of three variables that will be explained later in the research. These are named "Individual", "Organization", and "Environment". The group is complemented by a fourth variable (as is proposed in Gartner's model for new venture creation): "Process". This group is thereafter equally distributed under the jockey and the horse factor. Through the model of Gartner, there will be made an attempt to end the debate of whether the jockey or the horse is the most important investment variable, at least in the blockchain market.

The only category of the five basic categories of investment criteria that was excluded is the financial characteristics category. This was excluded because it was found too hard to ask respondents what they think about "the size of the investment, expected risk, expected rate of return, liquidity of investment" because it ranges per startup. Another reason is that potential answers would not have been considered relevant data, since it is hard to make conclusions: there is no possibility anyone can tell startups to increase the size of the investment, to increase the risk or rate of return since these questions do not relate to the startup but only to the investor. Since the goal is to compare, these investment criteria for blockchain startups and investors it seem useless to incorporate it in the model considering the context of the research. In future research where respondents are not asked to weigh investment criteria (but these criteria are actually measured for a startup) and only investors are questioned, these characteristics could be useful to study. Also, if anyone were to use the modified model of Gartner in future research, financial characteristics have to be included in the "Organization" variable.

Furthermore, Macmillan *et al.* (1985) explained that: "there is no question that irrespective of the horse (product), horse race (market), or odds (financial criteria), it is the jockey (entrepreneur) who fundamentally determines whether the venture capitalist will place a bet at all". In this research however, the horse will consist out of all characteristics except for those that concern the management or the activities they perform. Therefore, the organization, product, market and everything else will be classified as the horse and the entrepreneurs/management and activities they perform will be classified as jockey. The reason for this is that the organization and the market are related to each other: the products or services the organization produces will (partly) determine the market or steer the organization to its

market and environment, and the the jockey has power and control to choose these variables and therefore a solid distinction is made between groups: one that has control, executes and decides (jockey), how they want to steer or build the other group to that they desire (horse). In this research, the jockey factor will be measured through the "Individual" and "Process" variables and the horse will be measured through the "Environment" and "Organization" variable.

3.2 Stinchcombe

Stinchcombe (1965) proposed that the subsequent performance of a new firm is highly affected by two sets of founding conditions that are surrounding the founding: these are 1) organizational: employees should be in roles they are familiar with as opposed to unfamiliar with; and 2) environmental: there is an assumption that new ventures lack relationships, experience, and the provision services and products (Baum, Calabrese & Silverman, 2000). So to be able to more accurately predict the success of a new founding, the start should be made by what is surrounding its roots. To explain success through such conditions the help of a framework proposed by Gartner (1985) will come in handy, especially because it adds two more pillars to this theory.

3.3 Gartner model for the creation of new businesses

In Gartner's research, his model is described as a framework for describing new venture creation. New venture creation goes by the definition of the organizing of new organizations: "to organize is to assemble ongoing interdependent actions into sensible sequences that generate sensible outcomes" (Gartner, 1985).

Figure 1 displays a multidimensional framework that describes four variables that explain the creation of new ventures. The original model does not include jockey and horse.

a) Individual - these are the individuals that are participating in starting the new organization: skilled entrepreneurs and staff are a must. (In this research this variable will consist out of "entrepreneur and team characteristics", since from the five categories these are the closest related to the definition of the variable).

b) Organization - the type of organization that is started. The organization evolves over time. (In this research this variable will consist out of "product/service characteristics" and "financial characteristics", since from the five categories these are closest related to the definition of the variable, because when the product evolves (at least for new ventures) so does the whole startup: the startup moves through different stages at the same time as the product does. When startups are still developing the product, the product is in the development stage, when the startup is gathering resources, it has moved itself to the startup stage; and when the funds is received to build further on the technology it moves itself to the next stage and so further on (Hillier, Clacher, Ross, & Jordan, 2017).

c) Environment - the surroundings of the organization that affect the new organization. The organization is compelled to seek out resources and to compete. (In this study this variable will consist out of "market characteristics", since from the five categories this is the closest related to the definition of the variable, because businesses compete in the markets and are affected by stakeholders or competitors in the markets).

d) Process - the managerial activities the entrepreneur performs. Since the variables in the model of Gartner can be seen as the fundamentals that explain the creation of new ventures, in this research "Process" is tested to see if it can take a place in venture

capital investment criteria. Obviously investment criteria are used to scan business proposals and it is hard to scan “the activities that an entrepreneur will perform in a certain situation”, especially through the criteria Gartner proposed for this variable, e.g. “the entrepreneur accumulates resources”; “the entrepreneur markets products and services”; or “the entrepreneur builds an organization”. One criteria however caught the eye: “the entrepreneur locates a business opportunity”, which is a variable that can be used for all types of businesses and situations and can be quite challenging when framed well. Research by Choi & Shepherd (2004) already studied a criteria like this: “entrepreneurs decisions to exploit business opportunities”, a criteria that will be the representative of the “Process” variable. Another motive to frame it like this is because none of the five categories of investment criteria relate to the definition of this variable, but according to the model of Gartner the “Process” variable is present and important when creating a new venture. Choi & Shepherd (2003) claim that exploiting opportunities is very important when reaching for success in the entrepreneurial process. The exploitation of an opportunity refers to “those activities and investments committed to gain returns from the new product arising from the opportunity through the building of efficient business systems for full scale operations”, and since returns are exactly what investors would like to see, this variable with its new definition is an interesting one to test out (Choi & Shepherd, 2003).

Examples of dilemma’s that arise at exploiting business opportunities are that of lead time or delay exploitation: should the entrepreneur exploit an opportunity by maximizing lead time which can help strengthen the brand name of the business, achieve cost advantages because of experience effects, and achieve high margins because there is no price competition? Or should the entrepreneur delay exploitation, so he has time to reduce uncertainties by gathering information and build and expand the resources and capabilities of the firm before entering the market (Choi & Shepherd, 2003)?

Instead of only asking what startups and investors think are important, it is also interesting to see in which way both parties would deal with a situation. If an investor prefers lead time exploitation over delay exploitation, and the startups think it vice versa, there is a gap that needs to be reduced as both parties believe a different strategy is dominant in the road to success.

The criteria for the Process variable are based on the dilemma of lead time versus delay exploitation, with variables classified as “Knowledge of Customer Demand”, “Development of Enabling Technologies”, “Managerial capabilities” and “Stakeholder support”.

With “Knowledge of Customer Demand and the Decision to Exploit Opportunities”, the entrepreneur faces demand uncertainty before exploitation. Instead of assuming there will be demand for a certain product or service, entrepreneurs need to know or find out whether there will be. The entrepreneur needs to find out whether the customer perceives his product as valuable. The dilemma will be framed as a question in the survey: “the venture team needs to know what customer demand will be before developing and selling the technology”.

With “Development of Enabling Technologies and the Decision to Exploit Opportunities”, it is about the quality of the technology. If these are not developed fully, cost uncertainty and technical success will follow for the entrepreneur. A higher risk of failure is present for those who still doubt product quality when realizing a product into the market. If the entrepreneur takes his time and delays exploitation, he can experiment and learn from the new technologies and lower the technological uncertainty. When less risk is involved, it is easier for the

entrepreneur to exploit the opportunity. The dilemma will be framed as a question in the survey: “the technology should be fully developed before bringing it into the market”.

With “Managerial Capability and the Decision to Exploit Opportunities”, it is about those decisions that require skills, knowledge and experience to be able to deal with difficult management and production tasks. It is about managing resources. When the exploitation is delayed, the organization has more time to establish relations, deal with management problems, develop roles and routines, etcetera The dilemma will be framed as a question in the survey: “management needs to have knowledge about difficult management and production tasks that can arise, before starting to produce/develop the product”.

“Stakeholder Support and the Decision to Exploit Opportunities”, requires the whole organization to support and be prepared of performing the exploitation of the opportunity. The question here is aimed at how important it is to build stakeholder support before exploiting an opportunity, since it may take time to build a strong stakeholder support. The dilemma will be framed as a question in the survey: “stakeholders should first support the decision before exploiting any opportunity regarding the product”,

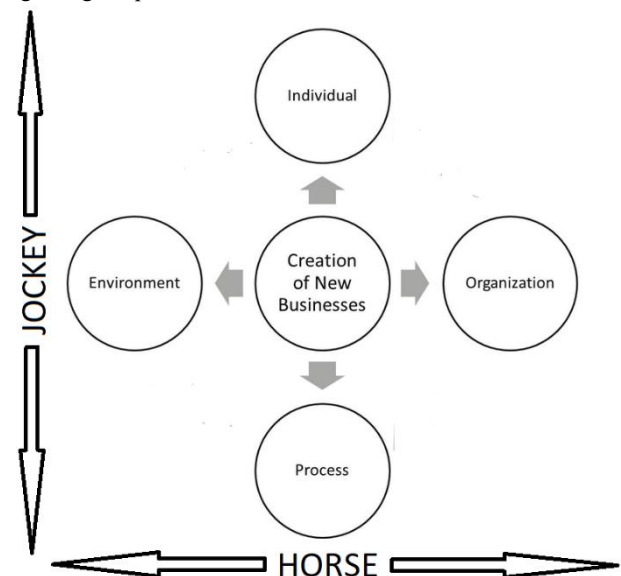


Figure 1. Jockey/Horse integrated in Gartner's model.

3.4 Stinchcombe and Gartner as a model to explain success

Stinchcombe (1965) proposed variables that explain the subsequent performance of a new firm, or whether it will be successful or not, whereas Gartner's model has the purpose to describe a new venture (and also two pillars more pillars are added). Gartner does that by creating a pattern of variables that describe a unique business (diagonal arrows are removed in figure 1 as opposed to the original model). However, if you can describe a pattern and presence of variables that together describe a venture that is very attractive for investments to investors, you can explain success through the model of Gartner, e.g. the most successful startups weigh “Environment” and “Organization” high and “Individual” and “Process” low. This unique venture could provide a pattern of variables that explains its success, namely it focuses on “Environment” and “Organization” and when more successful new ventures seem to follow this pattern, there could be drawn the conclusion that a pattern like this explains success new ventures have. Therefore, investment

criteria that have the function to explain and predict success fit perfectly as criteria under these variables. Keep in mind rule 1: if a startup meets investment criteria that explain success, it will be more attractive for investments. That is why conclusions will be drawn in 2 ways: what are the most important investment criteria when criteria are analyzed independent of each other, and what could be a combination of variables that are the most important/seem to be fundamental for success (pattern). In this research however, the pattern will only be analyzed for investors: it is too hard to find out what a successful startup exactly is, but investors do know it as is already mentioned in section 2.1: “Venture capitalists themselves are pretty successful in determining ventures that will be successful and researchers accredit this to these investment criteria they use”. To find out the pattern for a successful startup, only the pattern investors use should be followed, since the investors are perfectly capable of finding these successful startups. Though, the pattern in this research is only constricted to the jockey/horse pattern, that is whether investors focus more on the entrepreneur and team characteristics, or the environment and organization, which in itself is a pattern. It is very interesting to expand the patterns in terms of multiple combinations, for example to find an entrepreneur and team characteristics and organization criteria pattern for certain investors, and for other investors to find an organization and entrepreneurial activities pattern, or even patterns of characteristics within these criteria, but with the aim of this research, which is to find out whether the jockey or the horse is the most important, and the possibilities in terms of strong, statistical data analysis programs and expertise in these programs to actually analyze data accordingly, doing so is out of the proportions of possibilities and seems unnecessary to still properly pursue the research goal. Where patterns will be found in are different types of groups that will either follow the jockey or the horse pattern.

The variables Stinchcombe and Gartner propose are not identical and neither will they be used in this research the way they describe them both. The model is modified as a tool to explain the horse/jockey debate through investment criteria, with fundamental roots that explain which variables are present in a new venture and how these variables explain success. That still means that all these variables can explain venture success. For the “Process” variable it will be an experiment however if investors find these investment criteria important before investing. If investors find these activities and therefore criteria important, rule 1 enters into force.

What makes this model so important for the findings later on? The investment criteria entrepreneur & team characteristics and entrepreneurial activities on the one hand, and product and market characteristics on the other hand, are interrelated to each other. This means that a change to adjust to market criteria will probably affect the technology the startup is producing: a switch to a different market will probably also affect the product a business is producing and vice versa. This means that adjusting market criteria will make it easier to adjust to product criteria as opposed to the entrepreneur & team characteristics or entrepreneurial activities. More on this will be explained in the discussion.

4. BLOCKCHAIN

4.1 Overview

Blockchain is described as a distributed ledger and is a fully-decentralized system: because every participant has the possibility to possess a copy of the database it makes the system very reliable, because hackers would not have to hack only one central institution or server, but various copies to manipulate the system (Friedlmaier, Tumasjan, & Welp, 2016). To be more

specific, every user that is part of the peer-to-peer (P2P) computer network can view and check data in a “block”. These blocks contain authentic information and cannot be modified. What can happen is that blocks are complemented by other blocks, consequently forming a chain of blocks that is stored by every user of the P2P network. Therefore, blockchain can be described as a distributed ledger where all transactions are checked (Boer, 2018). But blockchain can serve as far more than “just that”: there is a wide variety in the applications of blockchain and so the sectors in which startups operate (Figure 2).

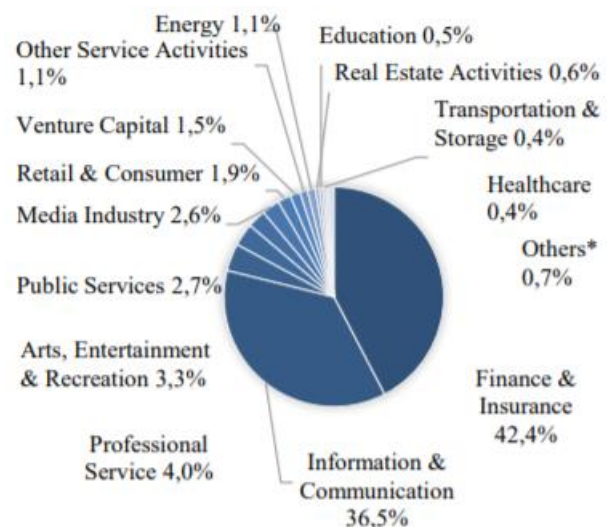


Figure 2. Percentage of startups operating in each sector

The Information & Communication and Finance & Insurance sectors are by far the biggest sectors in which blockchain startups operate. With a total of \$1.547 billion of investments in all startups, these two sectors alone received 97% of that total: around \$1.5 billion. The data was created and analyzed on June 15, 2016. Even the average investment of the two largest sectors (\$1.67 million) is way larger than the average investment in any of the other sectors (\$0 - \$0.44 million) (Friedlmaier, Tumasjan, & Welp, 2016).

4.2 Initial Coin Offering (ICO)

4.2.1 Overview

Traditionally, the most common method for ventures to find funds in their early stages is to target angel investors and venture capitalists, which would eventually culminate in an Initial Public Offering (IPO) (Tapscott & Tapscott, 2017). An Initial Coin Offering (ICO) is the equivalent of an IPO: it is a method for startups in the blockchain space to find funds and in essence not any different to an IPO than that funds are raised by pre-selling access to a product or service in the future, or sold on the internet (Li & Mann, 2018), (Adhami, Giudici, & Martinazzi, 2018). However, an IPO sells a share of ownership from the company, while an ICO sells a share of ownership from the project (Chohan, 2017), and ICO firms do not seek external help to value their token and attract buyers through an underwriter in contrary to IPO firms. The average ICO generates a return of 179% to investors, even when there have been negative returns within the first 60 days that tokens are not listed. Also the degree of underpricing is a lot larger than that of IPOs and is the result of the inexperience of the entrepreneurs in determining market demand for the token or the platform; uncertainty about startup value; and other factors. Abnormal returns after the first day of

listing range from an average of 14% to 16%, after a month from 41% to 67%, and after half a year from 150% to 430% (Benedetti & Kostovetsky, 2018).

These ICOs have become a very novel and important mechanism for financing blockchain startups (Catalini & Gans, 2018) and therefore their importance may not be underestimated: in 2017 it was expected that blockchain startups would receive more funds out of ICOs than any other mechanism (Catalini & Gans, 2018). Figure 3 explains how important ICOs have become to obtain funds for blockchain startups throughout the years.

4.2.2 Cryptocurrencies

A cryptocurrency is a digital or virtual currency and encrypted using cryptography. Among cryptocurrencies there are coins and tokens, definitions that should not be confused with each other. A coin does not represent value, it is a payment method without any intrinsic value (for most coins) and represents its own blockchain. This zero intrinsic value is because a coin is not something that is accepted in every trade, like money is, and therefore only has a nominal value.

A token operates on an existing blockchain technology that supports smart contracts and can therefore be more easily created (Boer, 2018). Just like money cannot be created by people, a coin cannot either and just like shares can be created, so can tokens. Tokens can therefore be seen as shares that are distributed to the public (Boer, 2018).

The two most common tokens are the security token, which provides security, reduces transactions costs and creates a record of ownership; and a utility token that represents access to the specific service. The latter also defines the value of the project and is used in most and the largest ICOs (Howell, Niessner, & Yermack, 2018).

A smart contract is defined as “an automated and self-enforcing digital contract relying on tamper-proof consensus on contingent outcomes, and financing through initial coin offerings” (Cong & He, 2018). In other words, smart contracts are programs designed by the user that specify rules that prevail a transaction and are enforced by a network of peers. Compared with traditional financial contracts, legal and transaction costs are low. (Delmolino, Arnett, Kosba, Miller, & Shi, 2016).

4.2.3 Metaphor of the blockchain world

Since a lot of people are unaware of what blockchain means even after explanations, a metaphor can clarify what is meant with all these terms.

A coin can be seen as money. Just like in real life, money represents a value and so does a coin, for instance Bitcoin. It is now worth approximately \$7000 and can be used to buy things. However, only a few retailers and services accept Bitcoin, let

alone other coins and that is why (most) coins do not carry an intrinsic value, but only a nominal value.

A token can be created by anyone and represents a value inside the project's ecosystem, either in the form of a share of the company; a digital asset; or provides access to the functions of the project (Cong & He, 2018).

Smart contracts are digital contracts that determine the rules of a contract, like payment, and automate their selves and therefore no mediator (or lawyer) is needed. It also automatically enforces these regulations.

Therefore, metaphorically speaking, blockchain should be seen as the economy of the world, where transactions take place; a coin should be seen as money: practically it is the digital equivalent of money, like the Euro or the Dollar; and a token should be seen as something created by a someone (a business) that represents a specific, underlying value, like a share of the company or the project, or something that gives you access to the project.

ICO market

Total ICO proceeds are approaching US\$4 billion and have exceeded venture capital investments in blockchain projects

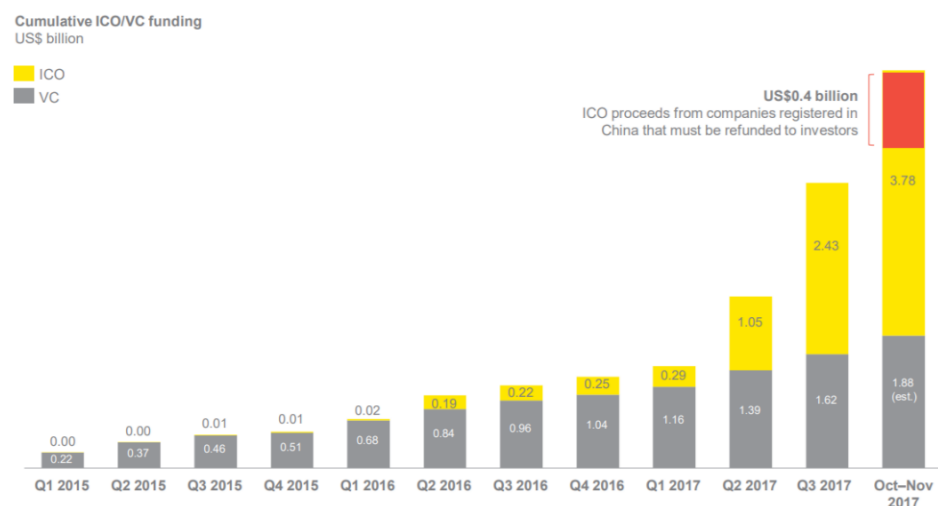


Figure 3. ICO proceeds relative to venture capital

4.3 Evolvement of blockchain space

4.3.1 A word from experts

According to Dino Lewkowicz, director at 4ARTechnologies¹, ICOs became popular begin 2016 and really popular in 2017, which is also projected in figure 3. “A blockchain space with small projects evolved in a gold rush environment where every venture with a half-decently worded whitepaper could raise millions (Lewkowicz, 2019).”

This is also what Zoran Đorđević, CEO of Tolar HashNET², explains: “investors in the blockchain space approach investments differently than investors in other branches. In this branch, investors are mostly driven by huge returns on

¹ “4ARTechnologies – 4ARTechnologies is building a blockchain-powered cataloguing and transactions platform to bring greater transparency, security and process efficiency to the art world (Unknown, What is 4ARTechnologies?, sd).”

² Tolar HashNET: “Tolar is an open source, community governed crypto-currency featuring scalable, secure, and fair

transactions (Unknown, Tolar HashNET Review:An Open Source, Community Governed Crypto-Currency Featuring Scalable, Fast, Secure, And Fair Transactions, 2018).”

investments, a reason why the expectations of ICOs cannot come true (Đorđević, 2019)."

Lewkowicz says that the rapid changes in the environment of blockchain also carried a lot of scams with it and investments were going up in smoke. The consequence of this is that investment criteria became even more important in the blockchain space. "In the fear of appearing as a scam, ICO ventures developed a standard to project professionalism: projects needed to have a whitepaper and websites with ideas, teams had to be experienced and provided with LinkedIn profiles and they had to be reinforced by advisors to improve their image (Lewkowicz, 2019).

This can be confirmed through a conversation with Adam Perschke, CEO at NOVAM³: "if you are focused on ICOs, emphasis should be placed the technology, white paper development and design, and the team that develops the technology. Investors in ICOs are not the typical 'accredited investors': a term to describe investors that have a specific income threshold. Investors that invest in ICO are mostly uneducated, unaccredited investors and base the choices of their investments at social hype (marketing). ICOs are all about marketing: paid-for advisors, team members, whitepaper design by consultants, marketing ad dollars on social channels and community engagement on Telegram. It is all pay to play. A new market, with a lot of unknowns to investors, entrepreneurs and the general public (Perschke, 2019)."

However, the visions described earlier were no guarantee for a realizable business according to Lewkowicz. "Despite all the hype, it is the most important to provide a working business model and progress towards a real company, which many companies failed in and still fail in. Last winter (winter of 2018) evolved the market into a far more mature market by eliminating these purely visionary or straight up fraudulent businesses. Now, more and more big financial players are paying interest to the market and it evolved more into a traditional VC and seed fund market. The main goal for beginning startups is to create a strong image and reputation, not for the crowd, but for the big players. These players demand solid business and marketing plans, long-term strategies, proven technology and everything that was required in the traditional startup scene. Most ICOs are not even acceptable nowadays, especially outside Asia, all because the rate of scams was far too great and the risk/reward ratio a very unattractive factor to investors (Lewkowicz, 2019).

Blockchain and cryptocurrencies are very cool and promising, but there are also a lot less exciting things going on (Lewkowicz, 2019)"

5. DATA ANALYSIS AND METHODOLOGY

5.1 Survey methodology

The purpose of the survey in this research is to gain greater insight in how blockchain startups and investors weigh investment criteria. This study deals with blockchain startups and blockchain investors. The selection of investment criteria is based on what the most important investment criteria are among previous studies, (e.g. Tyebjee & Bruno 1984; MacMillan *et al.* 1985; 1987; Zacharakis & Meyer 2000; Kaplan and Stromberg 2004)

³ NOVAM: "NOVAM the first Artificial Intelligence driven cybersecurity program utilizing DLT to increase the accuracy of its health check. NOVAM not only finds anomalies but also fixes them to boost your tech-immunity system, and even removes threats without prior knowledge of existing danger. Using

Table 1, 2, 3, and 4 report the results of the survey of investment criteria. In total the survey was filled out by 51 respondents, 39 of which were blockchain startups and 12 of which were blockchain investors (respondent lists: Appendix A & B). All startups that participated had already conducted an ICO. The investment criteria are classified under the variables "Individual", "Environment", and "Organization" on a five-point Likert scale, with two extreme anchors, 1 (not at all important) and 5 (extremely important). The respondents were asked to indicate their answer to the following criteria: "Which investment criteria would you find important if you had to evaluate your own startup" (blockchain startups) and "How important do you find the following investment criteria when evaluating business proposals" (investors)? For the "Process" variable, respondents were asked to indicate on a five-point Likert scale, with two extreme anchors, 1 (strongly disagree) and 5 (strongly agree) their answer to the criteria mentioned above.

Emphasis was placed on the quality of investment criteria and not on volume and therefore only 19 investment criteria were included in the survey. The only maverick of the group of 4 variables is the "Process" variable, which contains the entrepreneurial activities criteria. Criteria classified under this variable were selected based on putting the entrepreneur in the dilemma of exploiting an opportunity or not, because the criteria proposed for this variable in venture capitalist literature were irrelevant to analyze and did not challenge the entrepreneur to make a decision in contrary to criteria that have been selected as replacement (survey: Appendix C)

Other items relevant to the research and asked through the survey were "I consider the startup to be present in the following sector", containing answer options as displayed in figure 2. This item is based on section 4.1, that explains that startups present in the Finance & Insurance and Information & Communication or both (hereafter: F&I/I&C) sector receive 97% of the total amount of funds received by blockchain startups, and approximately four times the average amount of investments in any other sector. Respondents were asked in which sector they operate to find out if their opinions in how they weigh investment criteria can be traced back to the environment in which the startup operates; or that different opinions are given while operating in the same sector. The first would explain if the horse dictates how they perceive investment criteria (that is, is their response influenced by the market/organization in which they operate); the latter could be traced back to the individuals personality/experience (jockey) as to how the respondent comes to his conclusion. At the same time this result could also give answers to why investors seem to invest significantly more in the F&I/I&C sector compared with other sectors: if there can be found differences in the way startups in the F&I/I&C sector represent their selves compared with startups in other sectors, the significant difference in investments could be traced back to this attitude; if there cannot be found any differences, there can be concluded that it has more to do with the product the startup offers or the markets in which they are operating. The remaining two items are: "The startup I represent takes into account investment criteria", also asked through a five-point Likert scale, with two extreme anchors, 1 (strongly disagree) and 5 (strongly agree); and "I think the most important investment criteria are" where the answer options contained one or multiple variables of the model. The latter question was asked to gain insight in what investors base

machine learning and probabilistic mathematics, they plan to offer a security system that is ever-alert, always present and device agnostic" (Unknown, MNVM Novam Distributed Cybersecurity for IoT, sd).

Table 1. Survey results – importance of investment criteria (“Individual” variable)

BLOCKCHAIN		INDIVIDUAL															
		A		B		C		D		E		F		G		H	
		Mean		Standard deviation		Median		Mode		Mode		Frequency %		% 1-2		% 3	
Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors
N = 39	N = 14																
INDIVIDUAL																	
1a. Entrepreneur & Team characteristics		4.06	4.03	0.60	0.56	4.00	4.00	4	4	38	42	7.1	4.8	17.6	19.3	75.3	75.8
1.	A. Management leadership abilities (Present)	4.53	4.57	0.69	0.51	5.00	5.00	5	5	62	67	0	0	10.3	0	89.7	100
	B. Management leadership abilities (Past)	4.18	4.29	0.85	0.73	4.00	4.00	4,5	4,5	41	50	5.1	0	12.8	14.3	82.1	85.7
2.	Ability to evaluate risk	4.23	4.14	0.71	0.77	4.00	4.00	4	4	54	42	2.6	0	7.7	21.4	89.7	78.6
3.	A. Strong track record	3.90*	4.21*	1.02	0.70	4.00	4.00	4	4	41	42	10.3	0	17.9	14.3	71.8	85.6
	B. Strong track record relevant to venture	3.74	3.79	1.02	1.05	4.00	4.00	3	4	36	42	10.3	14.3	35.9	21.4	53.8	64.3
4.	Relevant source	3.64	3.50	0.96	1.29	4.00	3.5	4	3,4	44	33	15.4	21.4	23.1	28.6	61.5	50
5.	Market familiarity	4.26	4.00	0.88	0.68	4.00	4.00	5	4	48	58	5.1	0	12.8	21.4	82.1	78.6
6.	Backgrounds	4.03*	3.71*	0.96	0.73	4.00	4.00	5	4	38	50	7.7	0	20.5	42.9	71.8	57.1

Table 2. Survey results – importance of investment criteria (“Environment” variable)

BLOCKCHAIN		ENVIRONMENT															
		A		B		C		D		E		F		G		H	
		Mean		Standard Deviation		Median		Mode		Mode Frequency %		% 1-2		% 3		% 4-5	
Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors
N = 39	N = 14																
ENVIRONMENT		3.48*	3.07*	0.65	0.54	3.00	3.00	3	3	32	39	16.7	28.9	32.1	38.5	51.3	32.7
1b. Market characteristics																	
7.	Growth rate	4.05*	3.50*	0.76	0.94	4.00	3.5	4	3,4	51	42	2.6	14.3	17.9	35.7	79.5	50
8.	Threat of competition	3.03*	2.57*	0.96	0.85	3.00	2.5	3	2	49	42	23.1	50	48.7	35.7	28.2	14.3
9.	New market creation	3.08	3.00	1.22	0.88	3.00	3.00	3	3,5	31	42	30.8	35.7	30.8	28.6	38.4	35.7
10.	Existing market stimulation/satisfaction	3.77*	3.21*	1.14	0.80	4.00	3.00	5	3	33	50	10.2	14.3	30.8	57.1	59.0	28.6

Table 3. Survey results – importance of investment criteria (“Organization” variable)

BLOCKCHAIN		ORGANIZATION															
		A		B		C		D		E		F		G		H	
		Mean		Standard Deviation		Median		Mode		Mode Frequency (%)		% 1-2		% 3		% 4-5	
Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors
N = 39	N = 14																
ORGANIZATION		3.92*	3.60*	0.57	0.55	4.00	4.00	4	4	39	47	5.67	9.2	28.8	29.3	62.6	61.5
1c. Product characteristics																	
11. Proprietary		3.29*	2.79*	1.11	0.89	3.00	3.00	3	3	59	50	15.4	35.7	48.7	42.9	35.9	21.4
12. Market acceptance		4.31*	3.86*	0.73	0.95	4.00	4.00	5	4	46	42	0	7.1	38.5	28.6	46.	64.3
13. Uniqueness		4.00	3.79	0.69	0.70	4.00	4.00	4	4	54	42	0	0	23.1	35.7	76.9	64.3
14. Prototype		4.03*	3.57*	0.99	0.76	4.00	4.00	4	4	41	58	7.7	7.1	15.4	35.7	76.9	57.1
15. Competitive advantage		3.97	4.00	0.90	0.56	4.00	4.00	4	4	49	75	5.2	0	17.9	14.3	76.9	85.7

Table 4. Survey results – importance of investment criteria (“Process” variable)

BLOCKCHAIN		PROCESS															
		A		B		C		D		E		F		G		H	
		Mean		Standard deviation		Median		Mode		Mode Frequency %		% 1-2		% 3		% 4-5	
Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors	Startups	Investors
N = 39	N = 14																
PROCESS		3.06	3.39	0.66	0.98	3.00	3.00	4	2,4	42	29	16.0	28.8	22.4	17.3	61.6	53.8
1d. Entrepreneurial activities																	
16. Knowledge of Customer Demand		4.08	3.71	0.70	1.07	4.00	4.00	4	3,4,5	59	33	2.6	14.3	12.8	28.6	84.6	57.1
17. Development of Enabling Technologies		2.90	3.07	1.17	1.39	3.00	3.5	3	4	36	42	35.9	42.3	35.9	7.1	28.2	50
18. Managerial Capability		3.85	3.64	1.01	1.22	4.00	4.00	4	4	49	33	12.8	28.6	12.8	7.1	74.4	64.3
19. Stakeholder Support		3.59	3.14	1.04	1.23	4.00	3.00	4	2	41	42	12.8	42.9	28.2	21.4	59.0	35.7

their investment decision (mostly) on and to see if startups correspond to that, in contrary to the answers respondents can give in the Likert scale where the recorded data provides insight in how important investment criteria are weighed. Investment criteria can be considered important but may not be decisive in decision making, that is whether investors invest or not, and therefore the question was asked to see on what investment criteria investors base their decision the heaviest. The results are ordered in tables 1, 2, 3 and 4 are expressed as a mean $\pm$ standard deviation, followed by the frequency of the answer options. The data displayed in row 1a, 1b, 1c and 1d; and columns A-F, represent the mean of that variable based on the data of the criteria classified under that variable.

5.2 Methodology

To find out whether the jockey or the horse is the most important factor in the blockchain space, the results are divided into different subjects:

1. The most important investment criteria and variables (no comparison between groups);
2. Differences between how blockchain startups and investors weigh investment criteria relative to each other (comparison between groups);
3. Differences between how blockchain startups, and investors weigh investment criteria (comparison within groups)
4. The “Process” variable which was tested out.

5.2.1 Data analysis

A combination of these results will eventually determine whether the jockey or the horse is the most important factor for blockchain startups and investors.

A Z-test is conducted to “Investigate the significance of the difference between an assumed population mean μ_0 and a sample mean $\bar{x}$.” If there is a significant difference, there can be said that it was not a coincidence that the two groups weighed the variable differently: these two groups actually differ in their opinions.

“From a population with assumed mean μ_0 and known variance σ^2 , a random sample of size n is taken and the sample mean $\bar{x}$ calculated. The test statistic

$$Z = \frac{\bar{x} - \mu_0}{\sigma / \sqrt{n}}$$

will be used by a two-tailed test, with critical region of size α ” (Kanji, 2006).

Differences between groups (point 2 and 3 above) are analyzed because a lot of respondents differ in background and therefore in which investment criteria they find important. Finding differences between groups gives different information than compared within groups. Respondents within groups will carry the same characteristics, and will carry different characteristics between groups. What can be analyzed is why these groups will answer differently (as the results will show) and there can be pointed to the characteristics the respondents carry. In this context, the differences in groups will consist of in what sector startups find their selves active in; if they take into account investment criteria or not; and whether investors are small or big.

Point 3 will among other things exist of comparing the sectors in which startups operate. The relevance of analyzing the differences in why the F&I/I&C sector receive so much more investments than other markets is to check whether this actually has to do with the markets targeted or products that are produced in these sectors and to see if the jockey or the horse may have an impact.

Also, since the startups and investors will be placed in different groups, Appendix D is made that describes every single group and which startups are active in them. If oversight is lost about the groups, consult Appendix D.

As a reminder, a factor is referring to the jockey or the horse; a variable is referring to Individual, Environment, Organization and Process (as proposed in the model of Gartner (1985); and investment criteria are the criteria that can be found under these variables (criteria 1 – 19, Appendix C). The latter will sometimes also be referred to as only “criteria” instead of “investment criteria”.

Another reminder is that the jockey consists out of the “Individual” (entrepreneur & team characteristics) and “Process” (entrepreneurial activities variables, and the horse consists out of the “Organization” (product characteristics) and “Environment” (market characteristics) variables.

Lastly, when there is referred to “startups” or “investors” this refers to these players in the blockchain space and only the blockchain space. The results have no relation to other industries until proven otherwise in future research.

Empirical findings

5.2.2 The most important investment criteria and variables and implications on jockey and horse

The following findings deal with what can be observed to be the most important variables and criteria according to blockchain startups and investors.

5.2.2.1 The most important investment criteria

The survey results (table 1, 2, 3 and 4) indicate that blockchain startups and investors weigh the entrepreneur & team characteristics as the key criteria. Investment criteria number 1, the ability to display leadership abilities, was considered the most important investment criteria among both blockchain startups and investors in blockchain startups according to the mean: $\mu = 4.53$ for blockchain startups and $\mu = 4.62$ for investors (table 1, column A). This criteria is also classified under the variable that scored the highest mean of all the variables ($\mu = 4.06$; and $\mu = 4.03$ respectively) for both blockchain startups as well as investors: “Individual” (entrepreneur & team characteristics). The key criteria under the other variables according to the mean were: “Growth rate” ($\mu = 4.05$; and $\mu = 3.54$); “Market acceptance” ($\mu = 4.31$; and $\mu = 3.92$); and “Knowledge of Customer Demand” ($\mu = 4.08$; and $\mu = 3.85$) for startups and investors respectively. Standard deviations of both groups were well-nigh the same and indicate that there were no significant differences in the differences of answers given among the first three variables (tables 1, 2 and 3, column B). Only for the “Process” variable there can be found a huge standard deviation (at least for the investors) $\sigma = 0.97$. The standard deviations of criteria under the “Process” variable are also relatively high compared with other standard deviations, which will be further explained in a later section about this variable.

When observing the weights startups gave to the variables, the jockey can be observed as the most important factor, namely when the means of team characteristics and entrepreneurial activities are summed and averaged ($4.06 + 3.06 = 7.12 / 2 = 3.56$) and those of the horse, namely market and product characteristics ($3.48 + 3.92 = 3.70$) the horse scores higher for startups.

When observing the weights investors gave to the variables, the horse can be observed as the most important factor, namely when the means of team characteristics and entrepreneurial activities are summed and averaged ($4.03 + 3.39 = 7.42 / 2 = 3.71$) and those of the horse, namely market and product characteristics ($3.07 + 3.60 = 6.67 / 2 = 3.34$) the jockey scores higher for investors.

An interesting statistic can be found in the key criteria according to blockchain startups and investors: the same key criteria can be found for both groups under every variable (“Management leadership abilities (present); “Growth rate”; “Market Acceptance”; and “Knowledge of Customer Demand” respectively for the variables “Individual”; “Environment”; “Organization”; and “Process”. This indicates that for every variable, blockchain startups are at least on the same wavelength with each other on what investment criteria are the most important.

5.2.3 Differences between blockchain startups and investors

A Z-test is executed to test whether the difference in how blockchain startups and investors weigh investment criteria is significantly enough to say that there is a difference. An alpha of 0.01, or a confidence interval of 99% will be held on to for the calculation of a significant difference of variables, because there needs to be certainty if a conclusion is made that startups actually differ in their opinion on the importance of the variable, because the conclusion of the whole research will be based on it. The calculations of the Z-test of the variables can be seen under the four following subsections. A Z-test was also conducted to find significant differences between criteria under variables, where the same alpha or confidence interval is held on to. Because the conclusion of the research will not be based on these differences

and because these differences are already incorporated in the calculations of the variables, calculations of the Z-test will stay hidden: it would be unnecessary to show all the calculations of the criteria under variables. When a significant difference is found, the variables in text and the numbers in tables 1-4 are added with a star (*). Normally, this “star” refers to P-values, but since the means or μ is more important to startups and investors, these statistics can be observed instead of P-values. Therefore, the star refers to a significant difference between two means or μ where a Z-test was conducted (calculations hidden as explained). $N = 39$ for every variable, because there were 39 startups that participated in the research.

A Z-test was conducted to find out if there are significant differences between how both groups weigh investment criteria.

Entrepreneur & Team Characteristics

$$H_0 ; \mu = 4.03$$

$$H_1 ; \mu \neq 4.03$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{4.06 - 4.03}{\frac{0.56}{\sqrt{39}}} \approx 0.34 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups and investors are on the same wavelength with regards to how much importance they place on entrepreneur & team characteristics.

Market characteristics*

$$H_0 ; \mu = 3.07$$

$$H_1 ; \mu \neq 3.07$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.48 - 3.07}{\frac{0.54}{\sqrt{39}}} \approx 4.74, \text{ which is greater than } 2.575 \text{ and therefore}$$

the null-hypothesis will be rejected. A significant difference is established: blockchain startups generally place too much importance on market characteristics relative to investors.

Product characteristics*

$$H_0 ; \mu = 3.66$$

$$H_1 ; \mu \neq 3.66$$

$$\alpha = 0.10$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.92 - 3.60}{\frac{0.55}{\sqrt{39}}} \approx 3.63 \text{ which is greater than } 2.575 \text{ and therefore}$$

the null-hypothesis will be rejected. A significant difference is found: blockchain startups generally place too much importance on product characteristics relative to investors.

Entrepreneurial activities

$$H_0 ; \mu = 4.03$$

$$H_1 ; \mu \neq 4.03$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.06 - 3.39}{\frac{0.98}{\sqrt{39}}} \approx -2.1 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups and investors are on the same wavelength with regards to how much importance they place on entrepreneurial activities

5.2.4 Analysis within groups

Because respondents differ in backgrounds and therefore also their opinion about which variables they find most important, an analysis is executed where the blockchain startups and investors have been divided into groups. Blockchain startups and investors are therefore not compared with each other.

5.2.4.1 Startups

The following results are about startups operating in different sectors and whether they take investment criteria in account or not. Since the average investment in the F&I/I&C sector is at least four times higher and these two sectors alone represent 97% of all the investments, an analysis was executed to see if this had anything to do with how the startups weigh investment criteria differently compared to the startups that are not active in these 2 sectors. Also, an analysis between startups in the F&I/I&C sector and startups in any other sector, where both groups take into account investment criteria, was conducted to see if there can be found differences between these groups when the investment criteria are actually reflected on the startup (namely, when blockchain startups take into account, it will be reflected onto their startups in contrary when it is not taken into account. This is a side-test to the research, because it was unknown whether the jockey or the horse would play a role in why the F&I and I&C sector receive so much more investment, instead of looking what the role of the jockey and the horse is as is searched for in all the other analysis.

Sector

The groups are divided as followed: one group of startups that is only active in either the Finance & Insurance or Information & Communication sector, or both (group 1); and one group of startups that is active in any sector except for the Finance & Insurance and Information & Communication sector (group 2). Group 3, the group of startups that are active in the F&I/I&C sector and in any other sector at the same time was excluded from the analysis, since these startups would be present in both group 1 as well as group 2 and this would bias the results (survey results: table 5).

Table 5. Survey results - importance of investment criteria (sector)

N=30		SECTORS			
Variable	Criteria	Mean		Standard Deviation	
		Group 1	Group 2	Group 1	Group 2
INDIVIDUAL	Entrepreneur & Team	3.99	4.07	0.62	0.63
ENVIRONMENT	Market	3.55	3.35	0.53	0.75
ORGANIZATION	Product	3.87	3.76	0.72	0.44
PROCESS	Entrepreneurial Activities	3.52	3.67	0.80	0.58

A Z-test was conducted to find out if there are significant differences between how both groups weigh investment criteria. The F&I/I&C startups (group 1) consist out of 11 startups and the startups in any other sector consist out of 19 startups.

Entrepreneur & team characteristics

$$H_0 ; \mu = 3.99$$

$$H_1 ; \mu \neq 3.99$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{4.07-3.99}{\frac{0.62}{\sqrt{19}}} \approx 0.56 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups in the F&I/I&C sector (group 1) are on the same wavelength with startups in the other sectors (group 2) with regards to how much importance they place on entrepreneur & team characteristics.

Market characteristics

$$H_0 ; \mu = 3.55$$

$$H_1 ; \mu \neq 3.55$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.35-3.55}{\frac{0.53}{\sqrt{19}}} \approx -1.64, \text{ which is in between } -2.575 \text{ and } 2.575$$

and therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups in the F&I/I&C sector (group 1) are on the same wavelength with startups in the other sectors (group 2) with regards to how much importance they place on market characteristics

Product characteristics

$$H_0 ; \mu = 3.87$$

$$H_1 ; \mu \neq 3.87$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.76-3.87}{\frac{0.72}{\sqrt{19}}} \approx -0.67, \text{ which is in between } -2.575 \text{ and } 2.575$$

and therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups in the F&I/I&C sector (group 1) are on the same wavelength with startups in the other sectors (group 2) with how much importance they place on product characteristics.

Entrepreneurial activities

$$H_0 ; \mu = 3.52$$

$$H_1 ; \mu \neq 3.52$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.67-3.52}{\frac{0.80}{\sqrt{19}}} \approx 0.82, \text{ which is in between } -2.575 \text{ and } 2.575$$

and therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups in the F&I/ I&C sector (group 1) are on the same wavelength with startups in the other sectors (group 2) with regards to how much importance they place on entrepreneurial activities.

No significant differences were found between how both groups weigh investment criteria and there can be concluded that the

sector in which a startup operates does not influence the importance it places on investment criteria

Take/take not into account investment criteria

Since some startups take into account investment criteria (group 4) where others do not (group 5), an analysis was executed to see whether these startups weigh investment criteria differently to those startups that do not take investment criteria into account. Out of 39 respondents, 26 startups (66,7%) did take into account investment criteria; 2 respondents were neutral to this question; whereas 11 respondents (42,31%) answered to not take investment criteria into account. Group 6, the group that “neither agreed nor disagreed” of taking investment criteria into account was excluded from the analysis, since these startups would be present in both group 4 as well as group 5 and would bias the results (survey results: table 6).

Table 6. Survey results - importance of investment criteria (take/take not into account investment criteria)

N=37 TAKE/DO NOT TAKE INVESTMENT CRITERIA INTO ACCOUNT					
Take into account investment criteria (Group 4)		N = 26		Mean	Standard Deviation
Don't take into account investment criteria (group 5)		N = 11			
Variable	Criteria	Group 4	Group 5	Group 4	Group 5
INDIVIDUAL	Entrepreneur & Team	4.07	4.09	0.63	0.56
ENVIRONMENT	Market	3.43	3.56	0.67	0.68
ORGANIZATION	Product	3.86	3.96	0.59	0.50
PROCESS	Entrepreneurial Activities	3.65	3.38	0.59	0.80

A Z-test was conducted to find out if there are significant differences between how both groups weigh investment criteria.

Entrepreneur & team characteristics

$$H_0 ; \mu = 4.07$$

$$H_1 ; \mu \neq 4.07$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{4.09-4.07}{\frac{0.63}{\sqrt{11}}} \approx 0.11 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria (group 4) are on the same wavelength with blockchain startups that do not take into account investment criteria (group 5) with regards to how much importance they place on entrepreneur & team characteristics.

Market characteristics

$$H_0 ; \mu = 3.43$$

$$H_1 ; \mu \neq 3.43$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.56-3.43}{\frac{0.67}{\sqrt{11}}} \approx 0.64 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria (group 4) are on the same wavelength with blockchain startups that do not take into account investment criteria (group 5) with regards to how much importance they place on market characteristics.

Product characteristics

$$H_0 ; \mu = 3.86$$

$$H_1 ; \mu \neq 3.86$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.96-3.86}{\frac{0.59}{\sqrt{11}}} \approx 0.56 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria (group 4) are on the same wavelength with blockchain startups that do not take into account investment criteria (group 5) with regards to how much importance they place on product characteristics.

Entrepreneurial activities

$$H_0 ; \mu = 3.65$$

$$H_1 ; \mu \neq 3.65$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.38-3.65}{\frac{0.59}{\sqrt{11}}} \approx 1.52 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria (group 4) are on the same wavelength with blockchain startups that do not take into account investment criteria (group 5) with regards to how much importance they place on entrepreneurial activities.

No significant differences were found between how both groups weigh investment criteria and there can be concluded that the sector in which a startup operates does not influence the importance it places on investment criteria. It should be noted that the sample size is pretty small.

Taking into account investment criteria and the two groups of sectors

Since the investments in the F&I and I&C sector are so much higher than in other sectors (section 4.2), an analysis was executed to check whether this could have anything to do with startups in the F&I and I&C sector taking into account investment criteria more than startups in other sectors.

8 out of 11 (73%) startups that were only active in either the F&I/I&C sector (group 1) or both, took into account investment criteria. 12 out of 19 (63%) startups that were not active in either the F&I or I&C sector (group 2). This difference is not very big (only 10%) and it can be assumed that a difference in the sector in which a startup operates has little to do with whether the startup takes into account investment criteria or not.

Can the difference in investments then be traced back to the sector in which a startup operates? To find this answer, two groups are needed that both take into account investment criteria, because when startups take into account investment criteria they will reflect it onto their startup. These two groups take into account investment criteria need to be divided in a group from the F&I/I&C sector (group 7); and a group from any other sector

(group 8) as can be seen in table 7. So to be more detailed: group 7 includes the startups that take into account investment criteria and operate in the F&I/I&C sector, and group 8 includes the startups that take into account investment criteria and operate in any other sector. It is a mixture of group 1 & 4, and 2 & 4. As can be seen with group 4, there are 26 respondents that take into account investment criteria. 8 of these respondents only operate in the F&I/I&C sector (group 7); 12 of these operate only in any other sector (group 8); and the last 6 of these operate in as well the F&I/I&C sector and another sector (group 9). Group 9 was excluded from the analysis, since the startups in this group would be present in both group 7 as well as group 8 and would bias the results (survey results: table 7).

Table 7. Survey results - importance of investment criteria (take investment criteria into account – sector)

Take into account investment criteria	TAKE INVESTMENT CRITERIA INTO ACCOUNT – SECTOR (F&I/I&C AND OTHER)					
	N=20		N = 8		N = 12	
	F&I/I&C (Group 7)		Any other sector (Group 8)		Mean	
	Variable	Criteria	Group 7	Group 8	Group 7	Group 8
	INDIVIDUAL	Entrepreneur & Team	4.04	3.97	0.72	0.62
	ENVIRONMENT	Market	3.75*	3.15*	0.42	0.73
	ORGANIZATION	Product	3.82	3.67	0.81	0.33
	PROCESS	Entrepreneurial Activities	3.63	3.68	0.80	0.43

A Z-test was conducted to find out if there are significant differences between how both groups weigh investment criteria.

Entrepreneur & team characteristics

$$H_0 ; \mu = 4.04$$

$$H_1 ; \mu \neq 4.04$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.97-4.04}{\frac{0.72}{\sqrt{12}}} \approx 0.34 \text{ which is in between } -2.575 \text{ and } 2.575 \text{ and}$$

therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria and are active in the F&I/I&C sector (group 7) are on the same wavelength with blockchain startups that take into account investment criteria and operate in any other sector (group 8) with regards to how much importance they place on entrepreneur & team characteristics.

Market characteristics*

$$H_0 ; \mu = 3.75$$

$$H_1 ; \mu \neq 3.75$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.15-3.75}{\frac{0.42}{\sqrt{12}}} \approx -4.83 \text{ which is smaller than } -2.575 \text{ and}$$

therefore the null-hypothesis will be rejected. A significant difference is found: blockchain startups that take into account investment criteria and active in the F&I/I&C sector (group 7) are not on the same wavelength with blockchain startups that take into account investment criteria and operate in any other sector (group 8) with regards to how much importance they place on market characteristics.

Product characteristics

$$H_0 ; \mu = 3.82$$

$$H_1 ; \mu \neq 3.82$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.67 - 3.82}{\frac{0.81}{\sqrt{12}}} \approx -0.41 \text{ which is in between } -2.575 \text{ and } 2.575$$

and therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria and active in the F&I/I&C sector (group 7) are on the same wavelength with blockchain startups that take into account investment criteria and operate in any other sector (group 8) with regards to how much importance they place on product characteristics.

Entrepreneurial activities

$$H_0 ; \mu = 3.63$$

$$H_1 ; \mu \neq 3.63$$

$$\alpha = 0.01$$

$$z = 2.575$$

If Z is less than -2.575 or greater than 2.575, reject the null hypothesis

$$Z = \frac{3.68 - 3.65}{\frac{0.80}{\sqrt{12}}} \approx 0.13 \text{ which is in}$$

between -2.575 and 2.575 and therefore the null-hypothesis will not be rejected. There is no significant difference found: blockchain startups that take into account investment criteria and active in the F&I/I&C sector (group 7) are on the same wavelength with blockchain startups that take into account investment criteria and operate in any other sector (group 8) with regards to how much importance they place on entrepreneurial activities.

The only significant difference found was between how both groups weigh market characteristics. Also, group 7, the group that takes into account investment criteria and is active in the F&I/I&C sector knows this with a lot more certainty than the group that takes into account investment criteria and is active in any other group (group 8), according to the standard deviation respectively for group 7 and 8 ($\sigma = 0.42$; and $\sigma = 0.73$).

5.2.4.2 Investors

To compare investors with each other, one of the last questions that was asked in the survey was: "I think the most important investment criteria are", where multiple answers were possible.

An interesting statistic can be observed in table 8. Individual or small investors mainly focus on entrepreneur and team characteristics, where the bigger, more experienced investors tend to focus on market and product characteristics. Note: the table is ordered from respondent 1 (lowest amount of investments in blockchain startups) to respondent 14 (highest amount of investments in blockchain startups) Thus, it is not safe to say that investors tend to focus significantly more on entrepreneur and team characteristics than on the other characteristics. The big investors may come in small numbers relative to individual investors, but their investment volume is significantly higher. As

could be seen in figure 2, VCs were responsible for 33% of the funds of blockchain startups, and also have a big share in the remaining 67% funds that is received through ICOs.

Big investor group vs small investor group

Is it after finding these significant differences for product and market characteristics in section 5.2.3 safe to conclude that blockchain startups focus too much on these characteristics and should place less importance on them?

When splitting the group into a group of big investors (group 10) that is responsible for the funds that startups receive during ICOs (venture capitalists); and a group of small investors that trades tokens and currencies between themselves and have little to no influence on how much funds a startup receives; assist in these kinds of proceedings; or have their own currency trading platform (group 11), it is found that the group with the big investors tends to focus more heavily on market and product characteristics (and also at entrepreneur & team characteristics), where the group with the small investors focuses on entrepreneur & team characteristics according to the last question of the survey, where respondents were asked to fill out which variable(s) they find the most important (survey results: table 8).

Table 8. Survey results - most important investment criteria (small and big investors)

SMALL AND BIG INVESTORS						
	N = 14		INDIVIDUAL (Entrepreneur & Team Characteristics)	ENVIRONMENT (Market Characteristics)	ORGANIZATION (Product Characteristics)	PROCESS (Entrepreneurial Activities)
	N = 8	SMALL INVESTORS	100%	13%	26%	13%
GROUP 11: Small investors	RETAIL INVESTORS/SMALL INVESTORS/ASSISTING INVESTORS/BLOCKCHAIN INVESTMENT PLATFORM	Investor 1	X			
		Investor 2	X	X	X	X
		Investor 3	X			
		Investor 4	X			
		Investor 5	X			
		Investor 6	X			
		Investor 7	X			
		Investor 8	X		X	
	N = 6	BIG INVESTORS	50%	25%	67%	0%
GROUP 10: Big investors	VENTURE CAPITALISTS (1M – 100M)	Investor 9		X	X	
		Investor 10	X			
		Investor 11	X		X	
		Investor 12			X	
		Investor 13	X		X	
	VENTURE CAPITALIST (+100M)	Investor 14		X		

Table 9, 10, 11 and 12 display that there are significant differences in how both groups weigh investment criteria. The group with the big investors scores way higher on market characteristics ($\mu = 3.33$; and $\mu = 2.88$) and a little bit on product characteristics ($\mu = 3.67$; and $\mu = 3.55$), but also scores way lower on entrepreneur & team characteristics ($\mu = 3.85$; and $\mu = 4.15$) and entrepreneurial activities ($\mu = 2.96$; and $\mu = 3.72$) for big and small investors respectively. What can also be observed is that although these big investors weigh the "Individual" variable higher than the other variables, only 3 respondents clarified at the end of the survey that they found this variable to be the most important, where of 2 of these 3 respondents said so in combination with another variable they think are the most important, against only 1 out of the 6 big investors thinks only the "Individual" variable is the most important. This against the other 4 big investors that thought that product characteristics were the most important, and 2 of them market characteristics. The "Process" variable was not considered as the key variable by one of the big investors. Note: Only startups were compared with either small investors or big investors and starred: small investors and big investors were not compared and not starred mutually.

Table 9. Importance of investment criteria (small and big investors) (“Individual” variable)

INDIVIDUAL								
BLOCKCHAIN			A			B		
Startups	Big investors	Small investors	Mean			Standard deviation		
N = 39	N = 6	N=8	Startups	Big Investors	Small investors	Startups	Big Investors	Small investors
INDIVIDUAL								
2a. Entrepreneur & Team characteristics			4.06	3.85	4.15	0.60	0.54	0.57
1. A. Management leadership abilities (Present)			4.53*	4.33	4.75*	0.69	0.51	0.46
B. Management leadership abilities (Past)			4.18*	3.83*	4.63*	0.85	0.75	0.52
2. Ability to evaluate risk			4.23*	4.50*	3.88	0.71	0.55	0.84
3. A. Strong track record			3.90*	4.00	4.38*	1.02	0.63	0.74
B. Strong track record relevant to venture			3.74	3.67	3.88	1.02	1.03	1.13
4. Relevant source			3.64	3.17	3.75	0.96	1.47	1.17
5. Market familiarity			4.26*	4.00	4.00*	0.88	0.89	0.54
6. Backgrounds			4.03*	3.33*	4.00	0.96	0.52	0.76

Table 10. Survey results – importance of investment criteria (small and big investors) (“Environment” variable)

ENVIRONMENT								
BLOCKCHAIN			A			B		
Startups	Big investors	Small investors	Mean			Standard Deviation		
N = 39	N = 6	N = 8	Startups	Big Investors	Small Investors	Startups	Big Investors	Small Investors
ENVIRONMENT								
2b. Market characteristics			3.48*	3.33	2.88*	0.65	0.61	0.42
7. Growth rate			4.05*	3.67	3.38*	0.76	1.03	0.92
8. Threat of competition			3.03*	2.67	2.5*	0.96	1.21	0.54
9. New market creation			3.08*	3.50*	2.63*	1.22	0.84	0.74
10. Existing market stimulation/satisfaction			3.77*	3.50	3.00*	1.14	0.84	0.76

5.2.5 Process Variable

Blockchain startups and investors weigh this variable respectively ($\mu = 3.06$; and $\mu = 3.48$) and only a few respondents think this is the most important variable (5 votes for “Process” out of 39 startups, and 1 vote out of 14 investors). When the “Process” variable was picked as “the most important variable” it was always with all the other variables as the most important variable as well. Nonetheless, it does not score very low by investors when considering the “Individual”, “Environment”, “Organization”, and “Process” variable among investors ($\mu = 4.06$; $\mu = 3.1$; $\mu = 3.66$; and $\mu = 3.48$). Moreover, it scores even higher than market characteristics.

Table 11. Survey results – importance of investment criteria (small and big investors) (“Organization” variable)

ORGANIZATION								
BLOCKCHAIN			A			B		
Startups	Big investors	Small investors	Mean			Standard deviation		
N = 39	N = 6	N=8	Startups	Big Investors	Small investors	Startups	Big Investors	Small investors
ORGANIZATION								
2c. Product characteristics			3.92*	3.67	3.55*	0.57	0.73	0.42
11. Proprietary			3.29*	2.83	2.75*	1.11	1.17	0.71
12. Market acceptance			4.31*	4.17	3.63*	0.73	0.98	0.92
13. Uniqueness			4.00	3.83	3.75	0.69	0.75	0.71
14. Prototype			4.03*	3.67	3.50*	0.99	1.03	0.54
15. Competitive advantage			3.97	3.83	4.13	0.90	0.40	0.64

Table 12. Survey results – importance of investment criteria (small and big investors) (“Process” variable)

ENTREPRENEURIAL ACTIVITIES								
BLOCKCHAIN			A			B		
Startups	Big investors	Small investors	Mean			Standard deviation		
N = 39	N = 6	N=6	Startups	Big Investors	Small investors	Startups	Big Investors	Small investors
PROCESS								
2d. Entrepreneurial activities			3.06	2.96	3.72*	0.66	0.97	0.92
16. Knowledge of Customer Demand			4.08	3.00*	4.25	0.70	1.10	0.71
17. Development of Enabling Technologies			2.90	2.5	3.50*	1.17	1.38	1.31
18. Managerial Capability			3.85	3.5	3.75	1.01	1.23	1.28
19. Stakeholder Support			3.59	2.83*	3.38	1.04	1.17	1.30

6. DISCUSSION

This study has examined investment criteria in the blockchain market for startups and investors, as well as comparing these two groups in the context of investment criteria. It was found that out of the four variables, “Individual”, or entrepreneur & team characteristics, were considered the most important criteria to startups as well as investors. Other key criteria were growth rate, market acceptance and knowledge for customer demand.

Table 1, 2, 3 and 4 reveal that when adding the means for startups of the jockey variables (entrepreneur & team characteristics, and entrepreneurial activities) and the horse (market characteristics and product characteristics) the horse scores higher than the jockey, but the jockey scores higher than the horse for investors.

The advice here would say to focus on the jockey first and after that the on the horse according to investors, but to what degree should that advice be taken?

With the use of the same tables, the differences in how blockchain startups and investors weigh investment criteria (the variables in this case) were compared (calculations at section 5.2.2). This delivered the result that generally, blockchain startups weigh too much importance on product and market characteristics, but is this actually true? In the context of what investors generally find the most important variable, blockchain startups do weigh too much importance on these characteristics, especially since the jockey was considered to be the most important to investors.

After splitting the group of investors in two, it was found that the small investors found the entrepreneur and team characteristics the most important, where the big investors tend to find the product characteristics in combination with market characteristics more important (table 9, 10, 11, and 12, section 5.2.4.2: Investors). The horse is therefore definitely more important to these big investors, although these investors do not weigh accordingly. This can indicate that the criteria proposed to these investors were not as relevant compared with other criteria that were not proposed to them in the survey. As Lewkowicz said: “Now, more and more big financial players are paying interest to the market and it evolved more into a traditional VC and seed fund market. The main goal for beginning startups is to create a strong image and reputation, not for the crowd, but for the big players. These players demand solid business and marketing plans, long-term strategies, proven technology and everything that was required in the traditional startup scene”, which are different investing criteria than were proposed in the survey. That does not say that the investment criteria in the survey do not make any sense, but it can mean that other investment criteria are more important for the blockchain space: criteria which have to be studied in further research.

The differences between the groups have probably something to do with whether a startup is about to conduct or is conducting an ICO; or that the ICO is already over. It was said earlier in this research that these small investors probably invest most of their funds after an ICO has been conducted and trade tokens between themselves: the startup will not see anything of these funds. The funds big investors (like venture capitalists) mostly invest are funds that the startup can actually use for itself: it are funds that give the startup the opportunity to grow and build its technology. If the group with the small investors mostly invests after an ICO has been conducted, the results make a lot of sense: the technology has, after the investments been made ready for use, a customer base for it and the only thing that can drive the price of tokens down are decisions made by the team. Decisions of the team will have major impacts from then on how a business projects itself and the product to the outside world, and influence the price of the token. This is then why probably those investors focus on entrepreneur & team characteristics. It also makes sense that the big investors focus more on market and product characteristics when looking at the quote of Lewkowicz described just now, that “These players require solid business and marketing plans, long-term strategies and a proven technology”, instead of any team criteria. They can choose between hundreds of business proposals every year and probably the most promising product in the most promising market will stand out, against hundreds of promising entrepreneurs. And as was said in section 2.2 “It seems necessary to have an initial strong business if a company wants to succeed. In contrary, it is not hard to replace management or improve management compared with a whole business plan, or the service or product the company wants to offer customers. A unique business idea

can prevent the business from failure or imitation.” On the other hand, these small investors can choose between hundreds of interesting technologies, because the technologies that received funds from the big investors are obviously the most interesting, or have the most interesting business plan. What distinguishes these technologies from each other are the entrepreneurs and management that push these technologies forward.

The results should help startups receive more funds and therefore startups should bet on the horse in their young lives, however that does not mean that the results where the jockey comes out on top are useless: after an ICO is conducted, it seems that the entrepreneur & team characteristics seem to become more important. And as rule 1 stated, meeting these investment criteria increases the chance of success for a blockchain startup.

The following will guide as an overview of all the results and theories to these results.

All in all, it is advised to focus on market and product characteristics and so to bet on the horse, before and during an ICO. It is advised to bet on the entrepreneur & market characteristics (and maybe entrepreneurial activities if possible) in the next stage of the blockchain startup. There are three groups here:

- Always take into account table 9, 10, 11, and 12 when the startup
 - o finds itself in the phase searching for funds: focus on the investment criteria the big investors find important; bet on the horse (market and product characteristics). This is the phase before or during an ICO.
 - o finds itself in the phase after searching for funds: focus on the investment criteria the small investors find important; bet on the jockey (entrepreneur & team characteristics and entrepreneurial activities). This is the phase after an ICO. Meeting these investment criteria will increase the chance of success of your startup. From then on probably little investments will flow into the business anymore, and small investors trade currencies based on probable demand there will be for this currency. Demand will increase when the investors believe the business will be successful, and these investors base this apparently on the entrepreneur and team criteria (and obviously other statistics). This stage requires you as a startup to listen to these small investors who allocate their funds over so many different projects: they will have a better understanding (all the investors combined at least) in what it takes for a startup to be successful or not.
- Always take into account table 1, 2, 3 and 4 when you as a startup want to meet the criteria small and big investors think are important: bet on the jockey and the horse. This will save time and money in different phases of your startup, as you do not want to adjust yourself in every stage the startups finds itself in to other investment criteria.

What does “To bet on the horse” or “To bet on the jockey” exactly mean? How can a startup adjust most efficiently to investment criteria? Keep in mind that the “amount to adjust to investment criteria” is pretty hard to establish, because these statistics are based on weights and there is no measurement for startups that says: “Startup A scores 3.90 now for the strong track

record criteria: it should hire two more people with a certain kind of track record to get to a 4.23.” But that is not even necessary, since all the measures are estimates based on opinions: the results give an idea where startups lack and that improvements in these criteria can at least minimize the gap. Furthermore, if there is a significant difference where startups score higher than investors, the consideration should be made yourself whether to adjust to the criteria. There can be no literature found that explains if investors appreciate it when startups score higher than necessary to their investment criteria. Lastly, always keep in mind the mean scores (μ) that respondents give, because this is the clearest measure of how important a variable is considered.

The following steps explain how you can bet on the jockey or the horse the most efficiently when this is advised.

- 1) Establish your goals: is the startup in the search of funds? Did it already finish this phase? Based on this entrepreneurs can make their own decisions on whether to adjust to the jockey or the horse.

The following example will be used for the next steps: the startup finds itself in the phase a few years after the ICO. The advice for this is to bet focus on investment criteria small investors find important (the jockey) and use tables 9, 10, 11, and 12.

- 2) Meet the investment criteria of the jockey first. Because “Individual” is considered to be the most important variable, adjust to these investment criteria first and after these to “Process” criteria.
- 3) Adjust to the significant differences with small investors illustrated in table 9 and 12 with a star first: these are investment criteria of the jockey and small investors find important, and the startup will probably lack in this phase. In the case of entrepreneur & team characteristics, significant differences in the management leadership abilities (present), and strong track record can be found. Why for example is it important to adjust the startup to a team with a strong track record? In the eyes of small investors you will lack this criteria. A strong track record is very important: “many investors allocate to different managers based on the managers’ historical performance or track record. Good performance is rewarded with higher allocation, while badly performing managers are replaced” (Kat & Menexe, 2006). If an entrepreneur lacks an impressive historical performance, his chances of success in the years after an ICO will decrease according to these small investors. After this, adjust to the significant differences that can be found under the “Process” variable.
- 4) Because there are no further significant differences to be found in the jockey factor, it is not necessary to adjust more to criteria entrepreneur & team characteristics or entrepreneurial activities criteria, because startups and small investors already more or less score the same. It is therefore not necessary to adjust to investment criteria under the jockey factor where investors score a little bit higher. Since there is no significant difference, this could be a coincidence. The decision is up to the startup to adjust more to investment criteria of the horse, but it is still advised here to adjust to those of the small investors first. In this case, when significant differences are found at the “Environment” and “Product” variable, startups score higher than the small investors and it is not necessary to adjust any more. If it would be the case that there are significant differences under the horse factor where

startups score lower than small investors and there is room for improvement,

A question that probably pops up is: why should the startup focus on market and product characteristics first if it is still in search of funds, and therefore to adjust to the investment criteria of big investors, when according to the means of the big investors they find the entrepreneur & team characteristics the most important criteria? As explained, what they find the most important characteristics are the product characteristics, followed by the entrepreneur & team characteristics and shortly after the market characteristics. The investment criteria that are proposed in the entrepreneur & team characteristics may be found very important by big investors, but the horse seems to be more crucial to invest in as investors filled out that the horse is the most important factor (4 times for product characteristics, 2 times for market characteristics and 3 times for entrepreneur & team characteristics). So why should a startup not adjust to product characteristics first, then to entrepreneur & team characteristics and after that to market characteristics? Because after all, big investors weigh entrepreneur & team characteristics pretty high and out of 6 big investors, 3 of them find entrepreneur & team characteristics to be the most important criteria.

This is because of the coherence between the variables under the jockey and the horse. For example, when adjusting to entrepreneur & team characteristics, the ability and way management deals with opportunities (entrepreneurial activities) will change as well as can be seen in the model of Gartner. If more leadership is required, a change in the entrepreneurial activities will find itself as well: if the entrepreneur as a “leader” want to pull the cart in the startup, he has to make big decisions, decisions explained in the entrepreneurial activities. If a team with a very strong track record is hired, it will be more capable to deal with these entrepreneurial activities than a team with a very weak track record, and probably little experience. The other way around, if an entrepreneur wants to exploit business opportunities and knows customer demand, he probably has to show leadership, get familiar with the market, get himself the ability to evaluate risk better by studying the market, or get a team to do it. This tune is the same for product and market characteristics: adjusting to market facilitates the adjustment to product characteristics and vice versa. Exactly those are the reasons that when there is advised to bet on the horse, change market and product characteristics first and after that the change (if you find necessary) to entrepreneur & team characteristics and entrepreneurial activities could be made.

Why is it also more important to focus on the horse in early stages and the jockey in later stages? It is pretty hard to change a whole business plan, and therefore the market a technology focuses itself on or the technology itself it wants to produce. In big multinationals where a lot of different products are produced, there can be focused on different markets, but blockchain startups produce one technology at the same time and big changes to the technology are hard to make, except for in the early stages. It is probably harder to replace management in the early stages of the startup because it will not be necessary yet and management will have all the information about what needs to be done with the technology. When this stage is left and the startup is transforming with its technology ready, it is a lot easier to replace management, but a lot harder to change the business plan, and therefore the market the startup will focus on and the technology it produces.

A side test to the research was that of why the F&I/I&C sectors receive so much more funds for their projects than startups in other sectors. No significant differences were found between both groups, neither was there found a significant difference

between how startups weigh investment criteria if they take investment criteria into account or not. However: a significant difference was found between the group of startups in the F&I/I&C sector and the group of startups that operate in any other sector, when both groups take investment criteria into account (and therefore reflecting it onto their startup): the market criteria. This is not really illogical: the motives of both groups might differ as is displayed in the mean of the four characteristics under the “Environment” variable: respectively, the F&I/I&C group and the group with the other sectors score for growth rate ($\mu = 4.63$; and $\mu = 3.67$); threat of competition ($\mu = 3.25$; and $\mu = 2.42$) and new market creation ($\mu = 3.13$; and $\mu = 2.58$) pretty different to each other (no tables). Where the group with startups in the F&I/I&C sector seems more concerned of the profits the market offers, the group with startups in any other sector seems to care less. This could also relate to the difference in investments: the F&I/I&C sectors itself may be more lucrative and also its startups may operate in it for the profits instead of for the technology and it could therefore have nothing to do with whether these groups take into account investment criteria or not. Obviously, sectors like the Arts, Entertainment & Recreation; Health Care; and Education will care more about the solution their technology offers instead of the profits it can make compared with startups in the F&I/I&C sector. It could be that investors invest more in the F&I/I&C sectors, because these blockchain startups have generally different goals and motives that align more with the goals investors have: to make a lot of money. Consequently, these startups will weigh more heavily on market characteristics, as the chosen market will be crucial in making profits. It could therefore also be assumed that the horse (product and market) seduces the investor more to invest than other products and markets do, instead of the entrepreneurs or people that operate in those sectors and that therefore the product or market characteristics (horse) play a big role in the volume and average amount investors invest. This would also indicate that investors would look at market and product characteristics first, and after that they will look what they believe is the best team, instead of vice versa. Reasons for this are pretty logical, already explained by Đorđević: “In this branch, investors are mostly driven by huge returns on investments”. There are two side notes to this explanation: the first is that investors probably first look at the market and the product and after that to the team; and the sectors in group 2 seem not appealing enough to invest in. The latter is because the rewards are probably too low for investors to invest in and since these investors are driven by high returns, investing in these sectors may not be appealing. Moreover, the lower rewards accompanied with the high risk ICOs bring with them could really turn off investors for investing in sectors different than the F&I/I&C sector.

According to the standard deviations of both groups, there is no reason to believe that there are a lot of contrary opinions and that the startups in the F&I/I&C sector; and the startups in any other sector agree within these groups that respectively market characteristics are important and less important, because the startups within the groups share the same goals and motives. That the average investments are significantly different between both groups could also have something to do with the with the risk/reward ratio in both sectors: because startups in the F&I/I&C sector find these market characteristics a lot more important than the startups in other sectors, and their goals are more heavily focused on making a lot of money, the risk/reward ratio of the market in which these startups operate is probably also more appealing to investors. The blockchain market is already considered to be a high risk/huge rewards sector, as explained earlier where it was said that the average returns of ICO investments is between 150% - 430% after a half year. Therefore

it could be assumed that startups not active in the F&I/I&C sector need to meet investment criteria of investors more heavily, so the risk is reduced and the rewards go up and that the ratio will correspond to that of startups active in the F&I/I&C sector. Further research could dig into the risk-reward ratio and see if these differences are indeed significant. Because if so, rule 1 enters into force: it would even be more important to meet investment criteria, and even harder for startups in these sectors to survive since it will be harder to receive funds (or maybe these startups require little investments to survive compared to startups operating in other sectors, also something that future research could find out). Because what was said about investments, was that VC-backed ventures have a higher survival and success rate. This could also be very useful for startups that doubt to begin in blockchain: if the risk-reward ratio can be tracked down for these sectors, starting entrepreneurs and the teams that accompany them could more carefully choose the sector in which they want to operate. And if motives are met, more people are on the right place in the right direction. And if more people are on the right place in the right direction, the survival and success rate of startups can only increase, causing less ICOs to fail, which means less investments going up in smoke, more profits for startups as well as investors and the blockchain market would be more interesting for external entrepreneurs and investors as well. Furthermore, where there are already so many investments in the F&I and I&C sectors, investors may feel more safe to invest in one of these two sectors. The 97% of investments that is invested in the F&I/I&C sector already explains that these sectors are probably more appealing to invest in and it could be because the technology is mainly focused on these two sectors. This “safety” could also explain why investor feel more safe to invest higher amounts in startups operating in these sectors. A note should be added: blockchain was obviously created to facilitate and secure transactions and therefore the F&I/I&C sector will obviously have a lot of startups operating in these sectors and it is also not surprising that the average investment is higher. But 97% of all the funds and an average investment of approximately four times higher is pretty high and can not only be assigned to the reasons described above. Thereby, the theory presented in the research about the motives, goals and risk/reward ratio will obviously play a role, the goal for future research is to find out how big the roles are these factors play.

The reason the “Process” variable was incorporated in the research is to test out if it could have a place in future venture capitalist investment criteria. It was not considered very important after respondents weighed the variable: a mean of $\mu = 3.06$ for startups and $\mu = 3.39$ for investors. Also, it was only chosen to be the most important variable by respondents five times for startups, in combination with all the other variables, and one time for investors, also in combination with all the other variables. For now it is perfectly logical respondents do not consider this variable to be the most important: it is a new concept and will be hard to check at business proposals or ICOs. Especially the “Knowledge of Customer Demand and the Decision to Exploit Opportunities” is an interesting criteria to be studied in future research. The standard deviation tells that a lot of respondents do not agree in their judgement and that there is a pretty huge gap. To some respondents these characteristics are pretty important, whereas they are not for others and this indicates that further research is necessary to determine if it can be important when incorporated rightly into the venture capitalist decision making process. Especially since the “Process” variable is the only variable where not any significant difference is found with the criteria in the variable, making it the only variable to accomplish that. What should be studied further is how this variable affects a firm. If investors see the importance of a criteria

like this and the impact it may have on a firm, they will add it into their decision-making process themselves. If Gartner is right and the “Process” variable is present in and explains a unique firm, there should be new successful ventures out there that are able to exploit this variable.

Limitations to the research relate heavily to the survey. Respondents were classified as either an investor or entrepreneur, while some respondents were investors as well as entrepreneurs. This was done on purpose, because the desire was to make a distinction between two groups and not three. Therefore, results are not biased in itself: if a lot of blockchain startups in the research are also investors, then this is without a doubt also the case in the actual blockchain market. This research is meant to help all blockchain startups and therefore all blockchain startups should be included. To find differences between blockchain startups and investors is therefore to include the whole group. In future research, there should definitely be asked if blockchain startups reached their soft or hard cap: this could reveal if there is a relationship between taking into account investment criteria or not and consequently reaching the soft and hard cap. Frame dependence is a bias that could have respondents interpret questions differently, especially with the “Process” variable since these were questions that could be interpreted in a lot of ways. Also, no questions were related to regulation which was commonly heard as feedback by respondents. Regulation plays a big role in ICOs now and also regulations in different countries should be taken into account. This is a part not included in this research. What should also be incorporated in future research and surveys, is the question of whether investors focus on investing blockchain entirely, or that they also invest in other markets and their investment capacity, asked in a range, like 1 – 10M, or questions like: “How much have you invested in blockchain startups already?” or, “What is your capacity of investing in blockchain startup?” Items like these can distinguish investor groups more clearly from each other and provide clearer reasons why investment criteria are deemed more important between groups, since distinctions within groups are probably more important than distinctions between blockchain startups and investors. Finding differences between startups and investors have found to be giving less answers to questions than searching for differences between groups. Limitations related to the criteria, are that the criteria used in this research are descended from old, venture capitalist literature. Although these are important criteria, during the research it was discovered that a lot of more modern criteria seem to play big roles to investors, like social media presence, a criteria that is just not present in venture capitalist literature because it is too recent. Also, the involvement in the blockchain space perfectly lays down some investment criteria not included in this research. Next time, also a weight on variables should be placed before using this model so better distinguish which factor is more important: the jockey or the horse. This could be done through a bar chart, where respondents can move their answer between what they find the most important between entrepreneur & team characteristics and entrepreneurial activities, and market and product characteristics. This bar could be swiped from left to right and respondents could then indicate what the ratio would be between the importance they place on variables of the jockey and the horse.

What makes this article strong is that it opens a lot of doors for assumptions that need to be researched in future studies. What is the relation of investment criteria to the phase in which a startup operates? Is it true that blockchain investors tend to invest more in the F&I&C sector because of the risk-reward ratio or motives/goals of the startups? Answering these questions with certainty can give a lot of very useful information to especially beginning blockchain entrepreneurs. As already explained, if

blockchain startups operate in sectors that align with their motives goals more heavily, their success rate will obviously increase. And although this may sound very logic, the blockchain market is different to those of other markets and still very upcoming as explained in the involvement of the blockchain space section. Rapid changes wiped out a lot of investors and welcomed new investors, and startups need to correspond to different investment criteria now. Therefore, clarity to these questions will guide beginning blockchain startups in their first few phases. Also, if investors have a better idea of the risk-reward ratio in every sector, and sectors that align with their goals, their investments will provide them the better returns, since the expertise of these investors is better exploited. And also this sounds very logic, but again: investors saw their investments going up in smoke with ICOs, which indicates that even investors have a lot of uncertainty in what investments will return. Obviously, that is coherent to the risk-reward ratio, but there is a possibility here to reduce the risk and keep the rewards high, so also investors that invest in other markets are seduced to invest in the blockchain market and the blockchain market will grow even further.

7. CONCLUSION

The aim of this article was to find differences in how blockchain startups and investors weigh investment criteria. It ended up with advise on where blockchain startups needed to bet on (the horse before and during the ICO, and the jockey after the ICO), and also assumptions why they should do so. Furthermore, the article laid out that the fundamentals of investment criteria are actually a format to success, and meeting these investment criteria could increase investments and the success rate of blockchain startups, and that these factors are all somehow related to each other. The model used in this research has fundamental roots that can explain the success of a new venture, and further research could look into how these variables actually work out in combination with each other in contrary to this research where it was more or so focused on how these variables corresponded independently. However, the attempt is made to see how variables relate to each other, like the market and product characteristics, but this is merely based on assumptions: a more powerful, statistical analysis and actually real statistical data of the matter in which companies meet investment criteria (instead of weights respondents give) could really help exploit this model and explain why some new ventures have success and why other do not succeed. The research also explained how the blockchain market evolved and how the startups evolved with these changes: because the players changed, the startups had to change as well and correspond to the investment criteria the new, big players find the most important. To make a distinction between what the most important factor really is, this really relates to the phase in which a startup finds itself in. To get the most funds for projects, startups should ask themselves the following questions: does the startup find itself in the phase where it is in search of its first investments: bet on the horse. Does the startup find itself in the phase where it is growing out of the startup phase: bet on the jockey.

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10. APPENDIX A & B – RESPONDENT LISTS OF STARTUPS AND INVESTORS

RESPONDENT LIST: STARTUPS

	Location	Founding Date	Industry	Company Size
STARTUP 1	Utrecht, the Netherlands	2016	Others	11-50
STARTUP 2	Amsterdam, the Netherlands	2016	Finance & Insurance	11-50
STARTUP 3	Enschede, Overijssel	2018	Arts, Entertainment & Recreation	2-10
STARTUP 4	Tortola, British Virgin Islands	2017	Professional Service	11-50
STARTUP 5	Paradiso, Switzerland	2017	Information & Communication; Arts, Entertainment & Recreation; Media Industry	11-50
STARTUP 6	Deventer, the Netherlands	2016	Energy; Education; Professional Service; Retail & Consumer	2-10
STARTUP 7	San Francisco, United States	2018	Other Service Activities	2-10
STARTUP 8	Munich, Germany; Chandigarh, India; London, England	2017	Healthcare	11-50
STARTUP 9	Cambridge, London	2017	Energy; Information & Communication	2-10
STARTUP 10	Prague, Czech Republic	2018	Healthcare	2-10
STARTUP 11	London, England	2018	Real Estate Activities	11-50
STARTUP 12	Sofia, Bulgaria	2015	Education	2-10
STARTUP 13	Amsterdam, the Netherlands	2018	Media Industry	11-50
STARTUP 14	New York, United States	2017	Real Estate Activities	2-10
STARTUP 15	Sofia, Bulgaria	2016	Finance & Insurance	11-50
STARTUP 16	Maastricht, the Netherlands	2018	Professional Service	2-10
STARTUP 17	Enschede, the Netherlands	Unknown	Unknown	Unknown
STARTUP 18	North Sydney, Australia	2017	Finance & Insurance	11-50
STARTUP 19	Yarrabilba, Australia	2018	Finance & Insurance; Information & Communication	2 - 10
STARTUP 20	Kyiv, Ukraine	2017	Finance & Insurance; Information & Communication; Professional Service; Retail & Consumer; Venture Capital	51-200
STARTUP 21	Vaduz, Liechtenstein	2017	Finance & Insurance	11-50
STARTUP 22	Prague, Czech Republic	2016	Finance & Insurance	11-50
STARTUP 23	Amsterdam, the Netherlands	2017	Information & Communication; Transportation & Storage	11-50
STARTUP 24	Unknown	Unknown	Finance & Insurance; Venture Capital; Other Service Activities	Unknown
STARTUP 25	Almere, the Netherlands	2017	Finance & Insurance	11-50
STARTUP 26	London, England	2017	Healthcare	11-50
STARTUP 27	London, England	2016	Finance & Insurance	2-10
STARTUP 28	Ljubljana, Slovenia	2017	Finance & Insurance; Energy; Education; Transportation & Storage; Healthcare; Professional Service; Public Services; Retail & Consumer	11-50
STARTUP 29	Singapore	2018	Finance & Insurance; Information & Communication	11-50
STARTUP 30	London, England	2017	Finance & Insurance	11-50
STARTUP 31	Paris, France	Unknown	Other Service Activities	11-50

STARTUP 32	Zug, Switzerland	2018	Professional Service; Arts, Entertainment & Recreation	11-50
STARTUP 33	Richardson, United States	2018	Others	11-50
STARTUP 34	Zurich, Switzerland	2015	Finance & Insurance	11-50
STARTUP 35	Tallinn, Estonia	2017	Finance & Insurance; Information & Communication; Retail & Consumer	2-10
STARTUP 36: SCIENTIFIC COIN	Redwood City, United States	2017	Finance & Insurance; Others; Information & Communication; Venture Capital	11-50
STARTUP 37	Tokyo, Japan	2018	Finance & Insurance; Professional Service; Media Industry	11-50
STARTUP 38	New York, United States	2017	Other Service Activities	2-10
STARTUP 39	London, England	2018	Energy	11-50

RESPONDENT LIST: INVESTORS

	Founding Date	Type	Company Size
INVESTOR 1	2014	Crypto advice	2-10
INVESTOR 2	2017	Crypto trading platform	2-10
INVESTOR 3	/	Unaccredited investor	/
INVESTOR 4	2013	Venture Capital (Blockchain only)	11-50
INVESTOR 5	2017	Venture Capital (Blockchain only)	201-500
INVESTOR 6	2013	Venture Capital	2-10
INVESTOR 7	/	Unaccredited investor	/
INVESTOR 8	2015	Venture Capital	2-10
INVESTOR 9	2014	Crypto advice and financing fund	2-10
INVESTOR 10	2018	Venture Capital	11-50
INVESTOR 11	/	Unaccredited investor	/
INVESTOR 12	2013	Crypto trading platform	11-50
INVESTOR 13	2014	Venture Capital	11-50
INVESTOR 14	/	Unaccredited investor	/

11. APPENDIX C: SURVEY

SURVEY			
Q1) I AM A...	Blockchain startup/Blockchain startup investor		
Q2) I CONSIDER THE STARTUP TO BE PRESENT IN THE FOLLOWING SECTOR(S)...	Finance & Insurance; Information & Communication; Professional Service; Arts, Entertainment & Recreation; Public Services;	Media Industry; Retail & Consumer; Venture Capital; Other Service Activities; Energy;	Education; Real Estate Activities; Transportation & Storage; Healthcare; Others
IF STARTUP IS SELECTED		(Strongly disagree – Strongly agree)	
Q3): THE STARTUP I REPRESENT TAKES INTO ACCOUNT INVESTMENT CRITERIA (TO BECOME MORE ATTRACTIVE FOR INVESTMENTS TO INVESTORS OR FOR OTHER REASONS)			
DIMENSIONS – INVESTMENT CRITERIA			
INDIVIDUAL	ENTREPRENEUR & TEAM CHARACTERISTICS		
1.	Management skills/leadership. <i>How important do you think it is...</i> The venture team displays leadership abilities? <i>How important do you think it is...</i> The venture team can demonstrate it displayed leadership abilities in the past?		
2.	Ability to evaluate risk <i>How important do you think it is...</i> The venture team is able to evaluate and react to risk well		
3.	Relevant track record <i>How important do you think it is...</i> The venture team has a strong track record? <i>How important do you think it is...</i> The venture team has a strong track record relevant to the venture?		
4.	Relevant source <i>How important do you think it is...</i> The venture team is referred by a trustworthy source?		
5.	Market familiarity <i>How important do you think it is...</i> The venture team is familiar with the market targeted by the venture?		
6.	Backgrounds <i>How important do you think...</i> The venture team is composed with people that have complementary functional backgrounds?		
ENVIRONMENT	MARKET CHARACTERISTICS		
7.	Growth rate <i>How important do you think it is...</i> The market shows a significant growth rate?		
8.	Threat of competition <i>How important do you think it is...</i> There is little threat of competition during the first three years?		
9.	New market creation <i>How important do you think it is...</i> The venture will create a new market?		
10.	Existing market <i>How important do you think it is...</i> A venture satisfies an existing market or stimulates a new need in an existing market?		
ORGANIZATION	PRODUCT CHARACTERISTICS		
11.	Proprietary <i>How important do you think it is...</i> The product is proprietary or otherwise protected?		
12.	Market acceptance <i>How important do you think it is...</i> The product enjoys and demonstrates market acceptance?		
13.	Uniqueness <i>How important do you think it is...</i> The product is unique or sufficiently differentiated compared to competitors' offerings?		
14.	Prototype <i>How important do you think it is...</i> A functioning prototype of the product exists?		
15.	Competitive advantage <i>How important do you think it is...</i> The product allows a venture to obtain a competitive advantage due superiority over products and services of competitors?		
PROCESS	ENTREPRENEURS DECISIONS TO EXPLOIT BUSINESS OPPORTUNITIES		
	First mover advantages: Lead time versus delay (prior exploitation) Each of the following statements are first mover advantages from which you have to keep the following in mind: Lead time: waiting to exploit an opportunity will reduce uncertainties by gathering information, and give time to build and expand the resources and capabilities of the firm before entering the market. Delay exploitation: exploiting an opportunity right away can help strengthen the brand name of the business, achieve cost advantages and experience effects, and achieve high margins because of no price competition.		
16.	Knowledge of Customer Demand and the Decision to Exploit Opportunities The venture team needs to know what customer demand will be before developing and selling the technology		
17.	Development of Enabling Technologies and the Decision to Exploit Opportunities The technology should be fully developed before bringing it into the market.		
18.	Managerial Capability and the Decision to Exploit Opportunities Management should needs to have knowledge about difficult management and production tasks that can arise, before starting to produce/develop the product.		
19.	Stakeholder Support and the Decision to Exploit Opportunities Stakeholders should first support the decision before exploiting any opportunity regarding the product.		
I THINK THE MOST IMPORTANT INVESTMENT CRITERIA ARE	Entrepreneur & Team Characteristics (Q1 – Q6) Market Characteristics (Q7 – Q10) Product Characteristics (Q11 – Q15) Entrepreneurial Characteristics (Q16 – Q19)		

12. APPENDIX D: GROUPS

GROUPS	
	Sectors
Group 1	Active in the Finance & Insurance (F&I) or Information & Communication sector (I&C), or both.
Group 2	Every other sector except for the F&I or I&C sector
Group 3	Active in the F&I or I&C sector (group 1) and in another sector (group 2). Excluded from analysis
	Investment criteria
Group 4	Takes into account investment criteria
Group 5	Does not take into account investment criteria
Group 6	Takes (group 4) nor does not take investment criteria into account (group 5). Excluded from analysis
	Investment criteria & sectors
Group 7	Only operate in the F&I/I&C sector
Group 8	Only operate in any other sector
Group 9	Operate in as well the F&I/I&C sector as another sector
	Investors
Group 10	Big investors who are responsible for the funds that startups receive during ICOs
Group 11	Small investors who trade tokens and currencies between themselves and have no influence on how much funds a startup receives (group 8)