What startup persona leads to venture capital investment and why?

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Affidavit

I hereby affirm that this Bachelor's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

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Abstract

With the rise of educational capabilities and high rates of economic growth, entrepreneurship has become a key way for the working population to avoid the corporate environment and become more independent from hierarchies. For venture capitalists, startups became the most profitable, but also the riskiest investments. The complication comes from the inability to accurately valuate the startups, creating the misalignment between entrepreneurs and investors in calculating future cash flows. In order to evaluate the startups with higher accuracy, venture capitalists focus heavily on assessing the persona of entrepreneurs. Their experiences and personality traits become the main selling point for some investors. However, personality assessments are typically influenced by human bias to a significant degree. Venture capitalists require persona research to make better investment decisions. The goal of this research is to utilize the qualitative adaptation of the Big 5 model to describe an entrepreneurial persona most likely to succeed with the investment. To legitimize the research, natural language processing techniques are applied to move from manual to automated processing of the data. With the use of topic modeling, the data will be less prone to bias, building a path for the automated analysis of persona.

Table of Contents

List of Figures

1   Introduction

1.1   Background information

With the rise of educational capabilities and high rates of economic growth – entrepreneurship has become a new fundamental way for the working population to avoid the corporate environment and become more independent from hierarchies. Digitalization allowed any individual entrepreneur to run the types of businesses that were only possible for multinational corporations in the past, with 6% of small and medium-sized enterprises (SMEs) trading with imports and exports (OECD, 2017:29).

For venture capitalists, startups have become the most profitable, but also the riskiest investments. The complication comes from the inability to accurately valuate the startups, creating the misalignment between entrepreneurs and investors in calculating future cash flows (Miloud, Aspelund & Cabrol, 2012:152). When 885 institutional venture capitalists were interviewed by Gompers, Gornall, Kaplan & Strebulaev (2020), the researchers identified that a venture capital company considers 100 startups to close one deal. However, while the valuation criteria of investors is a mixture of qualitative and quantitative characteristics (industry differentiation expressed as advertising expenditure divided by total industry sales, profitability as return on investment of the industry and others), the final decision is heavily influenced by the qualitative factors (Miloud et al., 2012:154-156). The research of Busch (2019) pointed out that an entrepreneur's experience significantly influences the accuracy of revenue forecasts. In the majority of the cases, especially in early-stage investing, investors focus on exit and valuation of comparable companies, rather than on the revenue models of their startup (Gompers et al., 2020:13).

Standard measures that focus on market capabilities or experiences are not the factors that play the most crucial role in an investment decision. Entrepreneurial personas heavily influence venture capitalists due to the immense levels of negotiation needed

to finalize the investment deal. Human bias plays a significant role in determining the persona of an entrepreneur since there is no standardized framework or definition of human nature that venture capitalists can compare their decisions to (Chenail, 2011:255). This paper aims to support the decision-making processes of venture capitalists through the use of qualitative phenomenological research, analyzed with the help of natural language processing. Natural language processing is used as a tool to legitimize the proposed entrepreneurial persona that venture capitalists can use as a guideline when they make investment decisions. The scientific validity of this research is achieved by automatically activating the language data using Latent Dirichlet Allocation.

The data is collected using interviews and surveys with questions based on the Big 5 Model. Phenomenological research type is selected because it primarily focuses on peoples' perception of their own experiences, or in other words, their experience of phenomena, rather than its factual occurrence (Sloan & Bowe, 2013:4). In our case, the main phenomena are the behavioral responses of entrepreneurs towards a predefined set of hypothetical events, formulated in accordance with the Big 5 traits.

When the interviews are conducted and the data is collected, the hermeneutic phenomenology method is applied. We are not interested in connecting 'what' and 'how' statements but to identify and interpret the meaning from them. (Sloan & Bowe, 2013:9). The meaning is extracted from the interviews by applying word embedding and topic modeling algorithms that automatically analyze and visualize the language data. We look for the topics with distinct meaning by aggregating and clustering the text and interpret them using the guidance of the visual data. In the end, the "hermeneutic circle" is completed, and the research is finalized.

We seek to understand what are the most critical criteria venture capital investors should look for when making investment decisions and give a detailed explanation of why specific traits should be prevalent over others. The paper utilizes research results to support the creation of real-world persona assessment frameworks for venture capitalists to increase the successful exit conversion rates of investment deals. Gomper et al. (2020) identified that 407 out of 885 investors believed a successful exit to be the most critical selection parameter of a startup. The approach of this

research is to model entrepreneurial persona through the use of natural language processing in an attempt to automate the decision-making process of investors, utilizing the language data received from a small sample size of entrepreneurs operating in Austria.

1.2   Research objectives

1. Survey the entrepreneurs with questions based on the qualitative adaptation of common quantitative Big 5 questions.
2. Apply natural language processing to model prevalent topics.
3. Investigate the most commonly used words in relevant topics and find the common word to label each topic.
4. When all steps are implemented for both questions in the Big 5 trait, interpret the topics to show the most prevailing characteristics of entrepreneurs.
5. After every characteristic is identified, create a persona of a successful entrepreneur.

1.3   Research aims

Venture capital has many theories behind the valuation of startups such as industrial organization economics, resource-based view, or network theory, with each of them providing different perspectives to evaluate performance (Miloud et al., 2012:153). The research aims to go deeper into persona aspects of the entrepreneurs with qualitative phenomenological research, focusing on intrinsic motivation qualities and how they correlate towards entrepreneurs receiving investment and successfully exiting. The research uses a post-materialism hypothesis with the assumption that entrepreneurs in their majority are motivated by non-materialistic life-goals (Thurik & Dejardin, 2012:3).

The research is highly relevant for the entrepreneurship scene since it explores deeply personal characteristics of entrepreneurs, which helps to create a favorable entrepreneurial persona for investors that is more likely to succeed in achieving their goals. We aim to identify what significance each Big 5 personality trait carries in bringing the entrepreneur closer to success. For instance, the research of neuroticism in 245 owners of SMEs identified that this factor played a significant role in the

failure of businesses, negatively influencing their performance and relationships they build with others (Adegbuyi, Ayoade, Ogunnaike, Adegbuyi & Binuomote, 2018).

By assessing all five traits together, applying automatic analysis of the reactionary behaviors of entrepreneurs in predefined events, our persona model might reduce the processing time of investments and reduce the number of negotiations needed to finalize a deal. It might also allow venture capitalists to incorporate a more effective qualitative approach into their decision-making process without the need for employees to manually process the information. They will be able to utilize natural language processing software to evaluate the data automatically. By having a model of favorable persona at disposal, the investors will know what factors they would need to look for in the visual reports, paving a data-driven way of decision-making.

2 Literature Review

2.1 Chapter Outline

The literature review consists of four parts: 1) origins of entrepreneurship and how the culture shaped the behavior of entrepreneurs, 2) history and forming of venture capital, and how their investment decision-making developed over time, 3) Big 5 model and personality traits, on which the entire research is based, and 4) description of Natural Language Processing with the use-case to reduce the bias in assessing qualitative research.

2.2 Entrepreneurship

2.2.1 Origins of entrepreneurship

One of the most influential people that stressed the importance of entrepreneurship in Austria, calling it the primary vehicle of economy, was Joseph Schumpeter (Braunerhjelm, 2010:2-3). This belief comes from Schumpeter's understanding of how entrepreneurs interact with the means of production. Entrepreneurs generally do not build new factories or warehouses, but they find creative and more efficient ways to use the existing means of production.

One of the most increasingly accepted definitions of the entrepreneur is the innovative person that efficiently operates under uncertainty and independently manages his or her time (Braunerhjelm, 2010:8). To be able to reach this stage, where the person has enough knowledge to tackle all of these challenges, many institutions need to transform from the policy-making that reacts to government change to an educational system that proactively promotes out of the box thinking and change.

It is argued that the organization of knowledge is one of the main factors that brought change to the businesses and lowered the entry barriers. In the post World War II era, European universities adopted the 'endogenous institutions' conceptual model, meaning that students in universities were incentivized to perform independent projects and research, creating the delegation mindset. In the post World War II era, the USA was the first nation to change this system by focusing on competition and pluralism (Braunerhjelm, 2010:17). This environment, based on competition, proved to be very successful in developing new entrepreneurs.

Many arrangements need to be agreed on to create a macroeconomic environment where entrepreneurs can succeed. Some of these are low transport costs, high human capital, competitive employment practices, high concentration of R&D, and availability of finances for different stages of the startups. It is also vital that the country has a dynamic economy with a growing population, low rates of unemployment, and others (Sutter, 2010:70).

Due to the 'immeasurable' variables in the demand and supply side of entrepreneurship, it is difficult to pinpoint what exactly defines and shapes this industry. No equilibrium point can be found for entrepreneurship since it follows a nonlinear behavior and is dependent on highly dynamic factors (Braunerhjelm, 2010:15-16). However, it is clear that most of the entrepreneurship revolves around the knowledge, so according to supply-side theory, more available knowledge leads to the higher growth of entrepreneurship.

2.2.2   Behavior and culture of entrepreneurs

Starting from 1945, World War II was over, and the world started the transition from the scarcity of physiological and safety resources to self-actualization and socialization, moving up Maslow's pyramid of needs. The world entered the period of

post-materialism, where many people have their basic needs covered, allowing them to focus on more profound activities such as self-development or creation of a social image (Thurik & Dejardi, 2014:177).
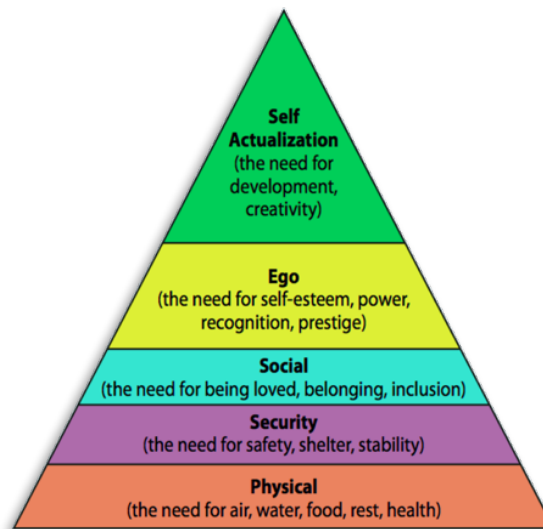
Figure 1: Maslow's Pyramid of Needs

Forty years after The Great Depression, where most of the world was at the bottom of Maslow's pyramid, the prosperity was steadily restored, and the mindset of the general population was changing. People that are born in times of prosperity are less likely to focus on economic and physical security because most of them never experienced poverty. This circumstance eliminates many of the mental barriers that prevent people from freely acting in times of uncertainty (Thurik & Dejardi, 2014:177). Combining the lack of mental blocks and global change in the institutions to promote small and medium-sized enterprises (SMEs), the wave of entrepreneurs started appearing throughout the whole world with revolutionary technical, social, or business solutions.

Sutter (2010) was researching the concept of 'Psychological Capital' by studying the individual entrepreneurs and identifying the correlation of how certain factors such as social relationships or education are influencing the individual psychological characteristics of entrepreneurs. These characteristics were studied for a very long time, and a consensus was reached that an entrepreneur has to be risk-tolerant, possess self-efficacy and a strong need for achievement (Sutter, 2010:69-70).

The whole entrepreneurial culture is fueled by individual beliefs that the entrepreneurs will be able to overcome all of the obstacles with the extent of this belief shaped by the dominant culture of a country. As an example, in the post-genocide era of Rwanda, the country was able to quadruple its Gross Domestic Product (GDP) by adopting interventionist policies that promoted entrepreneurship. Rwanda showed that the real value of entrepreneurship comes from identifying problems and solving them creatively and effectively. The government realized that some of their dominant industries: coffee, tea and tourism - can be further improved, so Rwanda created special education programs for farmers to raise their product quality to international standards (Isenberg, 2010:3-4).

The Rwanda case shows that culture is something that has to be facilitated by the government. As social capital aggregates in the region, the networks become denser, and the links between all of the entrepreneurs become increasingly stronger (Sutter, 2010:71). Along with those links, the culture spreads around the region. With a certain level of success stories, the clusters of startups naturally appear. From that point, entrepreneurs from all over the world are incentivized to start their ventures in that country.

2.2.3 Personality traits of entrepreneurs compared to general population

Previously it was described what kind of traits and values entrepreneurs have, but in order to make the distinction, it is crucial to understand how they compare to the general population. It has to be noted that most of the research conducted about the behavior of entrepreneurs is biased. When the data is collected and compared to different populations, it is often a case that only successful entrepreneurs remain by the end of the studies, not being the goal of the research (Rauch & Frese, 2007:373-374).

One of the main behaviors of entrepreneurs, risk-taking, had quite contradictory research appearing over a long time. Lazear (2005) used the industry earnings as the main attribute of risk tolerance and examined how it correlated to the wide range of skill sets. Hall & Woodward (2010) concluded that if the person has an average risk tolerance and $189000 in assets, the person would be indifferent between becoming an entrepreneur or being employed.

The research methods and phrasing of questions create a significant impact on the outcome of the research. Stewart & Roth (2001) and Miner & Raju (2004) investigated the comparison between managers and entrepreneurs and settled on the opposite results. The first research states that entrepreneurs are less risk avoidant than managers, while the latter concludes the opposite. This misalignment shows that there is a strong need for a different standardized methodology.

Asterbo, Herz, Nanda & Weber (2014) focused their research on the role optimism and complete belief in oneself in entrepreneurship. According to them, overconfidence, overestimation and overplacement play an essential role that motivates entrepreneurs to enter the competitive markets with their creative ideas. In other words, one of the personality traits of entrepreneurs is their complete belief in the positive outcome and confidence that they have more than enough skills to handle all of the obstacles.

Chen, Greene & Crick (1998) identified that many different traits fail to distinguish the difference between the entrepreneurs and the general population. Therefore it was decided to test self-efficacy, a term based on expectancy theory, as the new way to identify behavioral patterns. Expectancy theory is based on the idea that effort will lead to performance, and performance will result in a certain level of outcomes. Self-efficacy is concerned about the transition between the level of effort put into the activity and the performance that results from it (Chen et al., 1998:299). It is defined as the individual's belief in his or her ability to perform a task and succeed. This trait complements the research of Asterbo et al. (2014) that the entrepreneurs' perception of their abilities serves as an effective way to reduce the barriers of entry. Chen et al. (1998) found that MBA students that displayed higher levels of self-efficacy also felt higher levels of internal control, and it performed better against locus of control as an independent predictor.

2.3   Venture Capital

2.3.1   History and development

The origins of venture capital go back as far as the beginning of the twentieth century, where the main focus was on the infrastructure and mobility industry: railroads, steel, petroleum, or other quintessential industries at that time. The main point in history

when venture capital became something more was in 1911 when three fragile American companies merged to resist market recession. In 1924 this new entity acquired a new name 'International Business Machines' or more commonly known as IBM (Rind, 1981:170). According to Fortune 500 (2019), IBM is a 38th company in the world by revenue that shows that even before becoming mainstream, venture capital generated much economic value.

Another milestone that showed to the world what kind of high rewards investments can generate was the American Research and Development (AR&D) that invested $70.000 into Digital Equipment Corporation. In 1946 their small investment turned into a $490 million market value, a 7000% return on investment (RoI). From that point, many corporations and universities started creating spin-outs, inspired by the success stories of past investors. In 1974 due to the extreme government regulations and a volatile market, there were only nine investments made. When the US government noticed that the economy is better off supporting SMEs, capital gains taxes were reduced, and the processes of liquidity were reinvented to ease the acquisitions. As a consequence, in only four years, the investments increased by $750 million. In descending size order, the venture capital industry consisted of 4 types of organizations: private venture capital partnerships, small business investment companies (SBICs), finance, and industrial corporations (Rind, 1981:171).

The last significant event that defined venture capital development was the failure of corporate venture capital (CVC) and the immense success of partnerships. According to the survey by Tektronix (1978), only 7% of CVCs reported being successful in profits with more than half, not even having any profit margins. The most critical issues came from the following sources: lack of talent, unknown long-term commitment, misalignment in goals and motivation (Rind, 1981:175-177). All of the weaknesses of CVCs are the strengths of partnerships because they have a large pool of long-term committed experts. While CVCs bring structure and order, this is not enough to have a successful investment, so in the end, everyone benefits from collaborating and not focusing on doing the business in-house.

2.3.2 Investment risks

When assessing the risks of the investments, there are different actors responsible such as economic or market growth, government policies, or talent availability. On

the fundamental level, these statements are correct, but when it comes to real-world investments, only extremely particular information related to the deal can be used to reduce risks. Even the complete information for one investment deal can hold no value for any other deal (Fiet, 1995:552-553). Investors prefer to acquire a very focused type of information based on what kinds of risks are the highest in their priorities to avoid.

The types of risks that venture capitalists focus on are mostly related to product and market: protection of proprietary technology, vulnerability to competition in the first years, growth rate of the product along with the market, market stimulation that technology brings and acceptance of the product by the consumers (Haar & MacMillan, 1988:25). Most of the publications were written in the 80s and 90s, heavily focusing on the market characteristics.

More recent research by Buchner, Mohamed & Schwienbacher (2017) indicates that investors are primarily minimizing risks by diversifying their portfolio through investments in different industries and stages. The investors tend to lean towards high tech and early startups that yield higher returns, respective to industry and stages (Buchner et al., 2017:2). Gompers et al. (2020) highlight that investors are more likely to respond better to the experience of the founding team rather than the traction of a startup. However, earlier research by Kaplan, Sensoy & Strömberg (2009) contradicted this view by analyzing 50 venture capital firms and stating that business aspects (technology and business model) were more stable predictors of success than experiences of the management team. The majority of the research, provided in the review, highlights an overwhelming trend of team factor consistently ranking higher over the business model (Gompers et al., 2020:9-10).

For instance, Gimmon & Levie (2010) identified that all research that focused on assessing the impact of compatibility of the founders' team and their learning ability on the success of the startup proved that there is a significant degree of interconnection. Their research also pointed out an interesting notion that three out of four studies that assessed startup experience as the factor of success did not find it to be significant (Gimmon & Levie, 2010:1217). They concluded that the competence of human capital has a significant impact on the performance of a startup with venture investment, excluding the demographic factors as predictors of success. Therefore, it

is essential to have a clear way to distinguish more and less competent entrepreneurs (Gimmon & Levie, 2010:1223).

According to Fried & Hisrich (1994:33), as part of the evaluation activities, every member of the management team is always interviewed by venture capitalists before making an investment decision. This fact is vital for this research paper because it utilizes language data to model personas. Bush (2019) stated that the experience of entrepreneurs has a significant effect on revenue forecasting that complements the surveys of Gompers et al. (2020) that experience of top managers influences the investment decisions to a larger extent. Connecting the points, most venture capitalists already possess the relevant data needed for natural language processing, and the creation of favorable entrepreneurial persona might legitimize the judgments of investors to the stakeholders since the team is a highly subjective and general factor.

2.3.3   Investment decision making

There are six stages from the investment proposal to the investment: origination, venture capital specific, generic screening, first and second phase evaluation, and closing (Fried et al., 1994:31). In order to generate more applications, venture capitalists typically prefer to wait for the companies to apply through referrals from investment bankers or consultants. The biggest reason for it is to spend less time for the generic screening stage and invest more time into the evaluation of a specific startup (Fried et al., 1993:32)

Once the application reaches evaluation stage, VCs use a universal formula to calculate the valuation, consisting of pre-money valuation, differentiation, industry growth, management and startup experience, competences, network size and in some cases more, depending on the industry and investment stage (Miloud et al., 2012:163). Fiet (1995) provides a more statistically focused approach through the use of standardized coefficients, consisting of similar attributes to Miloud.

Foo, Gong, Liang, Wang & Zhou (2017) argue that venture capitalists, specifically in the US and China, tend to overvalue the startups by focusing on what people are willing to pay for (pricing of similar companies in the industry or public companies with adjustments), rather than on real value. WeWork, a real estate leasing startup,

was valued at $47 billion solely for the reason that the leading investor Masayoshi Son personally believed in the idea that proved over many years to be an unsustainable business (Sherman, 2019). When an overvalued company shows signs of success, it causes a further increase in overvaluation levels since the companies are continuously priced based on comparassment and not value (Foo et al., 2017:3). Personal faith into startups played the most substantial role it ever did in the past, and at the same time, there are no meaningful qualitative frameworks for investors to base their decisions on with a statistical degree of certainty.

2.3.4 Persona research application in investment

Aulet (2013) described the concept of persona as the best exemplification of the end customer. In order to have a successful end-user, the team responsible for defining the persona needs to focus on making the customer successful and happy. However, the defined person should not merely be a composite of several features but a smooth interconnection of all common characteristics that result in summation in a real person (Aulet, 2013:71). Due to the subjective nature of qualitative research, natural language processing was selected to compensate for the human bias that occurs in the processing of the interviews. Chenail (2011) highlighted that bias in research originates from the inability to define the expectations of results accurately. There is not enough research completed in assessing entrepreneurial persona, to be able to estimate what results our research will yield. When a favorable persona is defined, investors might be able to incorporate it into their decision-making processes, since from that point, they will have a model that would help them to make estimations of what kind of entrepreneur they can expect to succeed.

2.4 Big 5 Personality Model

2.4.1 Scientific Validity and Consistency

To come up with an average entrepreneur that is most likely to receive venture capital investment, the Big 5 Personality model was used to evaluate the results received from the Natural Language Processing module called Latent Dirichlet Allocation (LDA). According to Hee's (2014) research, where he examined the personalities of 343 nurses in Malaysia, the model proved to be scientifically valid, and overall, Big 5 is the most widely used personality model in the world.

When it comes to consistency, Cobb-Clark & Schurer (2012) assessed the personality change of the working-age population over four years using the Big 5 model and identified that there was no significant change in the personalities from 2005 to 2009. Neither age groups nor external factors (loss of employment, health, and family events) influenced the personalities in any way. It can be extrapolated from their research that human nature tends to be more constant than malleable. Therefore a focus on non-cognitive abilities to assess personality is a valid approach since if it is successful, the persona will remain constant.

2.4.2 5 Personality Traits

Extraversion

Kerr, Kerr & Xu (2017) use an energetic approach to define extraversion. They argue that if a person feels energized from social activities that involve interaction with other people, then the person is more likely to be extraverted. It includes traits such as activity levels, emotionality and self-assertiveness. In the interview questions, the trait focuses on dealing with negative emotions and the extent to which entrepreneurs involve other people to overcome them. Rauch & Frese (2007) stated that extraversion plays the most significant role for salespeople and less for other occupations. Nevertheless, the trait is still useful for the research because entrepreneurs generally do not have specialized roles in their startups, and it is a broad trait that includes both behavior and affection.

Agreeableness

Zilig et al. (2002) put an accent in their research that agreeableness is closely related to extraversion, but is smaller in the scope of its meaning. While extraversion focuses both on behavior and affection to the people, agreeableness concerns itself plainly with the person's behavior. According to Kerr et al. (2017), entrepreneurs are more likely to score less on this trait than an average person, indicating that the lack of hierarchy allows entrepreneurs to behave freely.

Conscientiousness

Neal, Yeo, Koy & Xiao (2011) identified conscientiousness as the most important predictor of the ability to complete tasks independently. People that score highly in

this trait are likely to respond positively towards their responsibilities by working harder and being comfortable with risks. Rauch & Frese (2007) split conscientiousness into two dominant sub-traits: achievement and dependability - and determined that achievement is the factor that plays the most significant role for entrepreneurs.

Neuroticism

In contrast to conscientiousness, Neal et al. (2011) stated that scoring less in neuroticism leads to better job performance, improved ability to react and adapt to change. They argue that this trait is the most interconnected with other personality traits since a negative mindset and intrusive ideas negatively affect all crucial traits for entrepreneurs (Neal et al., 2011:180). According to Cobb-Clark & Schurer (2012), the working-age population tends to score lower than average in neuroticism (or higher in emotional stability), however, external factors such as health and loss of employment cause a noticeable increase in this negative trait.

Openness

Openness is a trait that causes the most extensive debate between the researchers, whether it represents intellectual capacity or culture. Zillig et al. (2002) summed up all of the arguments and concluded that openness is neither a behavioral nor an affectionate trait but rather a purely cognitive quality. The prevalence of cognition signifies the strong correlation between openness and the ability to process complicated thoughts, resulting in high levels of mental complexity (Kerr et al., 2017:10).

2.5   Natural Language Processing

2.5.1   Application in Research

The purpose of natural language processing is to interpret and manipulate the large sets of unstructured language data by breaking it down into pieces and identifying the ways to extract meaning from them (SAS, 2019). NLP originated in the 1960s as an idea to simplify the communication between a human and a computer through speech recognition. Two decades later, in the 1980s, the algorithm was applied in grammar theory, focusing on identifying intentions and themes by computing language patterns

(Khurana, Koli, Khatter & Singh, 2017). The language usage varies from person to person, and there is no explicitly defined set of rules that ultimately governs the language (Goldberg, 2017:1). By implementing the NLP concept into the supervised machine learning algorithms, the researchers were able to come up with an effective way to extract patterns from chaotic language data (Young, Hazarika, Poria & Cambria, 2018:55).

One of the conventional methods used in NLP is word embedding that follows a distributional hypothesis, which states that words with similar meanings are likely to be present in a similar context (Young et al., 2018:56). To determine whether the words are similar, they are expressed through vectors that have a specific value (Goldberg, 2017:117). According to Goldberg (2017), the aim of the distributional hypothesis on which this approach is based on is "in quantifying the semantic similarities between linguistic items" or in other words, finding certain linguistic logic and expressing it in numbers.

2.5.2   Latent Dirichlet Allocation

Blei, Ng & Jordan (2003) describe Latent Dirichlet Allocation (LDA) as a "generative probabilistic model" that can model a set of distinct topics from the language data and assign a probability to each topic. This set of probabilities can be visualized in the form of reports that humans can view and interpret (Young et al., 2018:56). This visualization is achieved by utilizing the dimensionality reduction methods, based on the assumption that the order of texts and words within the text does not play a role in the model (Blei et al., 2003:994). Topic modeling focuses on highlighting the overall trends in the meaning of words and visualizing it in the form of a "network of complementary products," meaning that it tries to interconnect the patterns of speech based on their meanings (Moody, 2016). Skip-gram is an architecture used by the algorithm to determine the relationship between symbols and words, based primarily on words appearing in the text multiple times (Leimeister & Wilson, 2019:2-3). lda2vec is a tool developed by Moody (2016) that combines skip-gram, initially utilized, and developed by Mikolov, Chen, Corrado & Dean (2013) in the word2vec tool, with latent Dirichlet allocation.

Afterward, the LDA visualization tool takes advantage of the dimensionality regression method to create an interpretable report (Blei et al., 2003:994). Moody

(2016) explains that this equation is created by utilizing the vectors of both words and documents, meaning that it can simultaneously evaluate individual words and also connecting the answers of different respondents.

2.6 Contribution of the paper to the overall research

Gompers et al. (2020) completed large scale research, identifying that 95% of venture capitalists from the sample of 885 believe team factor to be the most important in their decision-making process, ahead of the business model by 12%. Miloud et al. (2012) found a similar pattern of the quality of founders and managers affecting the valuation and future investment. Lazear (2005) and Hall & Woodward (2010) determined that entrepreneurs are risk-takers, basing their decisions on their pre-existing capital as the primary explanation of their behavior. These researchers identified that entrepreneurs are different from the average population and possess some factors that have a significant effect on investors. The qualitative adaption of the Big 5 model was used to determine what traits are prevalent in entrepreneurs and which ones are more important than others, based on the frequency of its display in the interviews. By doing that, we are able to utilize context and experiences in the persona definition process.

Thurik & Dejardi (2014) defined an entrepreneur as a person that never experienced poverty, thus removing most mental limitations that influence risky behavior and emotional stability. Adegbuyi et al. (2018) pointed out that neuroticism in SME owners significantly hindered their probability of succeeding. However, none of these researchers focused on defining a holistic type of entrepreneur that would consist of a wide array of traits and behaviors. Using the qualitative approach not only allows us to assess the factual occurrence of phenomena but the entrepreneur's perception of their experiences, creating a complete picture.

Rauch & Frese (2007) took a quantitative approach and connected all of the research that was conducted in the past about the entrepreneurial persona, reviewing large volumes of literature. Later, they came up with 51 traits that might define an entrepreneur and sent it to a team of experts that graded them on a 5 point scale. Experts are not the ones to define the behaviors of entrepreneurs like in our research, but entrepreneurs will do it themselves by sharing their experiences. The quantitative

approach did not account for context and human experiences, making it more challenging to apply the behaviors to real-life situations.

All of the researchers that discussed startup valuation agreed on the similar notions that startups were challenging to evaluate due to the issues with cash flows (Miloud et al., 2012), finding financially responsible entrepreneurs (Haar et al., 1988) and others. On the other hand, none of them offered a solution to look at entrepreneurs through the lens of their experiences. Many venture capitalists argued that this criterion is crucial for them, but none offered the solution to include language data in their decision-making process.

Foo et al. (2017) argued that venture capitalists assess their startups based on comparassment to other companies in the industry rather than by what value they represent. This lack of focus on the value of technology and humans is what drives investors to overvalue their startups continuously. The research of entrepreneurial persona with the use of natural language processing aims to help the investors to identify value in entrepreneurs more effectively.

3 Data Model

3.1 Overview

The data used in the lda2vec goes through two main stages. Firstly, it utilizes the skip-gram architecture for word embedding, in other words, the individual words are expressed as vectors, based on a bag-of-words approach that neglects the location of the words in the sentence (Leimeister & Wilson, 2019:2-3). Next, with the use of latent Dirichlet allocation, the word vectors from different texts are put into the same environment, where they are processed and interconnected (Moody, 2016).

3.2 Skip-gram Architecture

According to Goldberg & Levy (2014), the skip-gram model consists of two main parts: corpus *W* (each text is located separately from one another) and context *C*. They are connected in a mathematical formula of conditional probability, following neural-network language model P(C|W; θ).

$$p(c|w; \theta) = \frac{e^{v_c \cdot v_w}}{\sum_{c' \in C} e^{v_{c'} \cdot v_w}}$$

Figure 2: Conditional Probability Formula

In the conditional probability formula presented in Figure 3, e is the base of the natural logarithm, and v_c, v_w are the vector representations of context and corpus, respectively (Goldberg & Levy, 2014:2). The main objective is to iterate all possible variations until the highest probability is achieved.

3.3 Latent Dirichlet allocation

Latent Dirichlet allocation capitalizes on the conditional probabilities received from the skip-gram equation and implements document representation, mixture, and sparsing (Moody, 2016). Blei et al. (2003) explained that documents are randomly mixed, neglecting any order, to distribute words until a distinct pattern is identified.

$$p(D|\alpha, \beta) = \prod_{d=1}^{M} \int p(\theta_d | \alpha) \left(\prod_{n=1}^{N_d} \sum_{z_{dn}} p(z_{dn} | \theta_d) p(w_{dn} | z_{dn}, \beta) \right) d\theta_d.$$

Figure 3: Conditional Probability of Corpus

The formula in Figure 4 connects all three layers of latent Dirichlet allocation: α, β are text variables, θ_d is a document variable and z_{dn} and w_{dn} are word variables. This equation is adopted from the empirical Bayes approach to continuously estimate the text parameters α, β, with the purpose to find the highest probability. (Blei et al., 2003:1003) To achieve that, variational expectation maximization is used to maximize the parameters by identifying lower bounds (Blei et al., 2003:1005). Once all of the computations are completed, the perplexity is used to evaluate the results. The lower perplexity score signifies that the test data was successfully generalized, allowing to create the accuracy ranking of the documents (Blei et al., 2003:1008). In this research, there were six topics generated per document, with each computation run 10 times to reach minimal perplexity.

```
Topic: 0
Words: 0.045*"attent" + 0.045*"like" + 0.045*"peopl" + 0.045*"talk" + 0.045*"motiv" + 0.025*"feel" +
0.024*"enjoy" + 0.024*"center" + 0.024*"moment" + 0.024*"work"
Topic: 1
Words: 0.035*"enjoy" + 0.035*"begin" + 0.035*"tri" + 0.035*"best" + 0.035*"job" + 0.035*"puke" +
0.035*"stage" + 0.035*"time" + 0.035*"hat" + 0.035*"later"
Topic: 2
Words: 0.064*"comfort" + 0.049*"attent" + 0.049*"depend" + 0.049*"feel" + 0.018*"mix" + 0.018*"think"
+ 0.018*"particular" + 0.018*"centr" + 0.018*"didnt" + 0.018*"pretti"
Topic: 3
Words: 0.040*"feel" + 0.040*"kind" + 0.040*"enjoy" + 0.040*"attent" + 0.040*"like" + 0.022*"pride" +
0.022*"pressur" + 0.022*"excit" + 0.022*"mix" + 0.022*"uncomfort"
Topic: 4
Words: 0.092*"comfort" + 0.049*"care" + 0.049*"way" + 0.049*"involv" + 0.049*"tri" + 0.049*"feel" +
0.007*"like" + 0.007*"attent" + 0.007*"peopl" + 0.007*"talk"
Topic: 5
Words: 0.062*"nervous" + 0.034*"peopl" + 0.034*"center" + 0.034*"moment" + 0.034*"feel" +
0.034*"uncomfort" + 0.034*"situat" + 0.034*"begin" + 0.034*"energ" + 0.034*"need"
```

Figure 4: Word Embedding and Dirichlet allocation

Figure 4 displays the end result of the computations. Embedded words are perceived by a computer in the form of conditional probability using Figure 2 and they are connected into one topic equation with the use of Figure 3. Taking advantage of dimensionality reduction method, these numbers can be visualized as shown in the Methodology section.

4   Methodology

4.1   Research design

The research is based on the hermeneutic phenomenological design as the persona is a phenomenon, and we seek to understand its underlying structure: personal traits and characteristics that are most suited for venture capital investment (Merriam & Tisdell, 2015:24). The two main tools of phenomenological design used in the research are bracketing and horizontalization (Merriam et al., 2015:27). Bracketing is defined as limiting prejudices and assumptions in the research, explicitly following the post-materialism hypothesis by rejecting the influence of materialistic factors (Merriam et al., 2015:27). Horizontalization is equal treatment of data that will be collected through the interviews with entrepreneurs and clustering it using Big 5 traits: conscientiousness, extraversion, openness, agreeableness and neuroticism (Zillig et al., 2002:847).

After evaluation of the interviews, text clustering and identifying typical characteristics - the main components will be combined, and successful

entrepreneurial persona will be created. The purpose is to support venture capitalists in the effort to standardize their selection criteria.

4.2   Surveying

According to Harrie Jansen (2010), qualitative surveying focuses on analyzing the specific characteristics of the population rather than their frequency as in quantitative research. This data collection method better suits the goal of the research as successful entrepreneurs were not willing to conduct a 10-minute long in-depth interview due to the heavy workload. Surveying provided enough language data for an algorithm and expanded the number of participants from expected 10 to 14. The goal was to collect enough data regarding the personality of entrepreneurs by asking personal questions with hypothetical situations, based on the Big 5 model. Consequently, inductive qualitative surveys are selected, since there are some preconditions and the respondents are guided towards the specific direction with the use of different examples, to narrow the broad questions (Jansen, 2010).

The survey was created on the platform Typeform and consisted of the demographic information that was generalized in the findings and 10 questions, the answers to which are present in appendices.

4.3   Sampling method

The study sample is 14 successful entrepreneurs that operate in Austria. Highly personal questions posed difficulties in conducting the interviews, so the interview was substituted by surveys. Overall, 14 entrepreneurs took part in the research: two entrepreneurs interviewed and 12 surveyed. The population is entrepreneurs that operate in Austria and are willing to receive venture capital investments.

Nonprobability purposive sampling is used to find interview participants (Sharan et al., 2015:96). We aim to gain insights into the persona of entrepreneurs and find similarities in meaning from replies, then comparing it with venture capital selection criteria to get deeper insights into what processes can be improved.

4.4 Data collection

The sources of data are interviews and surveys with successful entrepreneurs. The interviews are scheduled through the personal network of an author, acquired through different events and conferences. The main keywords used for the paper are entrepreneurship culture, entrepreneurial persona, venture capital selection criteria, Big 5 model, NLP and LDA.

There are ten questions used to conduct the interview. Each personality criterion (extraversion, neuroticism, openness, agreeableness, and conscientiousness) has two questions that place interviewees into complicated hypothetical situations. Their in depth replies, guided by examples within the questions, are analyzed with machine learning algorithms. The questions are the following:

Extraversion

1) What is your typical process of dealing with negative emotions and does it involve communication with other people? (e.g. Do you talk with someone, keep it to yourself, commit to a hobby and others)

2) Can you tell me about the feelings and thoughts that you had at any point when you became the center of attention? (e.g. If you feel comfortable, whether it energizes you, causes impostor syndrome and others)

Agreeableness

3) You see that your employee is struggling at the workplace because of the high workload, what are the typical actions that you take if this person doesn't ask for help and what are your thoughts about this person? (e.g. Help or ignore the person, ask someone you know better first, only observe and others)

4) Your colleagues go out for a drink after work and ask you to join. You are very tired and don't want to go. What is your response to your colleagues and what do you actually think? (e.g. If you feel annoyed, pressured because of career implications and others)

Conscientiousness

5) Imagine that you made a big mistake at the workplace because of lack of knowledge that led to significant revenue damage. What are your action steps

to handle the situation? (e.g. Talk with your advisor, learn missing skills, look for ways to split the blame and others)

6) You are a manager of the company and you need to increase performance of the team, educate them and replan strategic goals. What is your process for setting priorities? (e.g. How do you identify what is more important to focus on, what factors do you consider, how do you evaluate your personal abilities to achieve your goals)

Neuroticism (Emotional Stability)

7) You tried to raise the funding for your startup, got to the termsheet stage with a famous VC and got rejected last minute. Please explain your process of dealing with this situation? (e.g. How do you control your thoughts, do you come up with a new funding plan, do you push through with the same VC and others)

8) Where do you direct your negative emotions towards? (e.g. the company for poor communication and procedures, yourself for lacking the skills and others)

Openness

9) You have free time after a complicated day at the job. You feel like you are not properly prepared to fulfil your tasks. What do you do with your limited free time and how much do you involve other people? (e.g. Learn new skills, build new career plan, contact your manager or mentor, or others)

10) You have a new solution for your company's problem, what are your action steps to plan and implement it? (e.g. Do you contact someone immediately or come up with a detailed plan by yourself first)

4.5 Thematic Analysis

The interviews are analyzed with the use of supervised machine learning. Figure 2 shows the process of word embedding and Dirichlet allocation with the use of the lda2vec tool. Figure 3 displays the visual representation of the vector equation, with the help of Gensim libraries in Python.
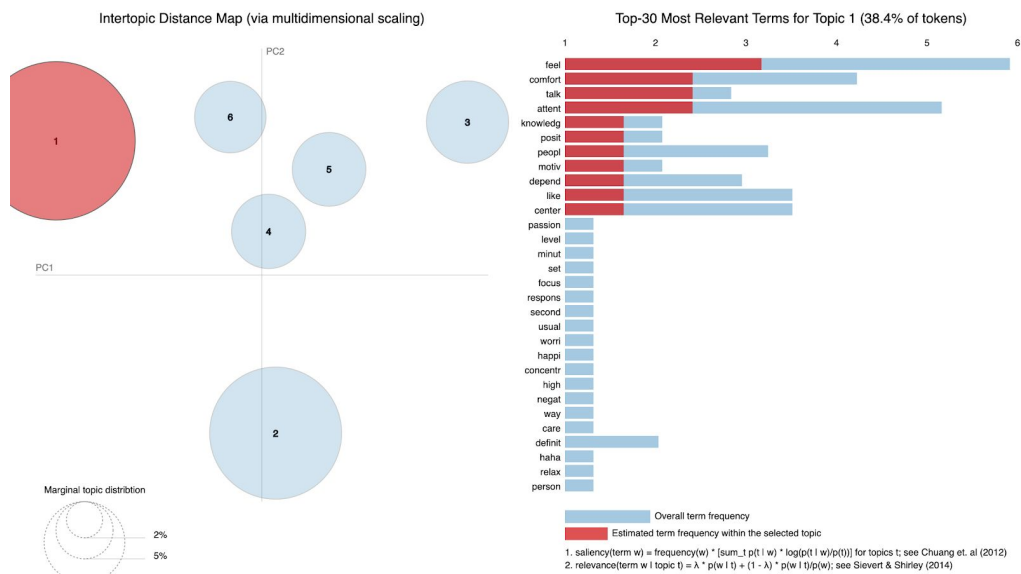
Figure 5: Visualisation lda2vec

The results in the form of topic models are compared and analyzed by assessing the essence of a phenomenon to understand the characteristics of entrepreneurial persona and figure out if the essence of the identified persona has similarities with the requirements of venture capitalists.
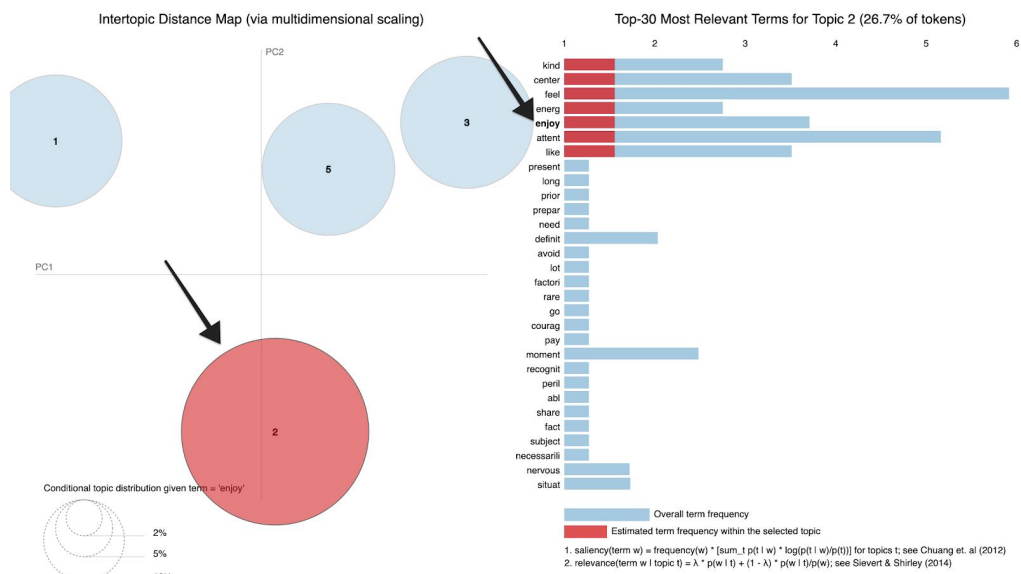

Figure 6: Visualisation lda2vec for Question 2, Word Selection

Once the topics (in the shape of circles) are generated as seen in Figure 3, the manual interpretation of the results begins. It consists of identifying the most relevant topics on the graph by selecting the largest and the most independent (away from others) circles. When the circle is selected, the horizontal bar chart on the right displays what words it consists of and their frequency. The goal of the researcher is to capture the context and label the topic with one to three words that sum up its meaning. Figure 4 shows one of the ways that helps to simplify the process by selecting the words that have the highest vector value in the circle, and seeing how many topics contain this word.

For example, question 2 is about being the center of attention, and the word 'enjoy' is present in the top two topics. Once the most important words are captured, they need to be connected with other words within the circle. In the end, the researchers can deduce the context without directly interacting with the text.

4.6   Ethical issues

The main ethical issues of the Big 5 approach arises from the criticism that the Big 5 model does not include essential factors of human personality such as humor, religiousness, honesty and others. According to Susan, Amber & Colin (2018), genetic and environmental factors do not influence the personality results, based on gender, however, some mixture of social and biological factors may influence the results, due to the relative simplicity of the model, compared to the enneagram.

Some of the people that took the quantitative version of the test in the past received different scores if they filled out the same answers as male or female (Goldhill, 2019). However, this issue is not present in the natural language processing approach, where the language data is analyzed without any demographic preconditions. Furthermore, due to the personal nature of the interviews, most of the respondents requested to stay anonymous, so the demographic information was generalized.

5 Findings & Results

5.1 Demographics

Overall, 14 entrepreneurs took part in the research, with eight founders of their startups and six top managers. Entrepreneurs often suffer from chaotic scheduling that caused many interviews to be postponed. The founders in their 30s refused an interview request due to the time constraints and only agreed to fill out a survey. This caused the change in the data collection method from interviews to online surveys.
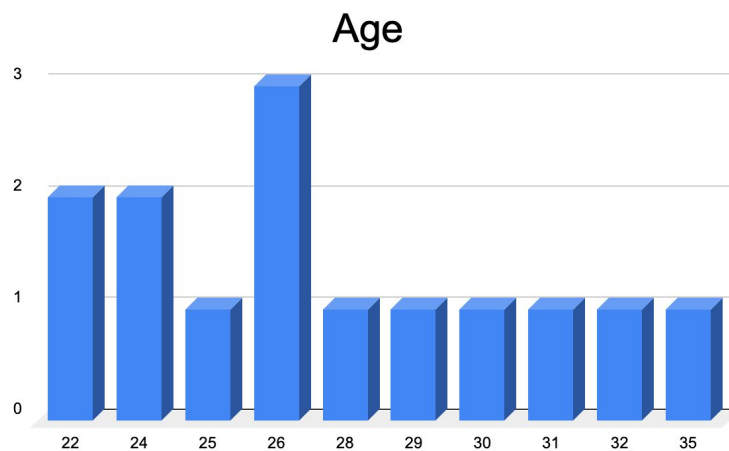

Figure 7: Age of Participants

The age range of the entrepreneurs varies from 22 to 35 years old, with a median age of 26. All entrepreneurs, no matter the age, were averaging from 2 to 3 sentences per question. Due to the nature of the research, more text proportionally brings higher returns in natural language processing results. Therefore it was vital to aggregate as much language data as possible. The answers of entrepreneurs were detailed enough to get sensible results from a relatively low sample size.
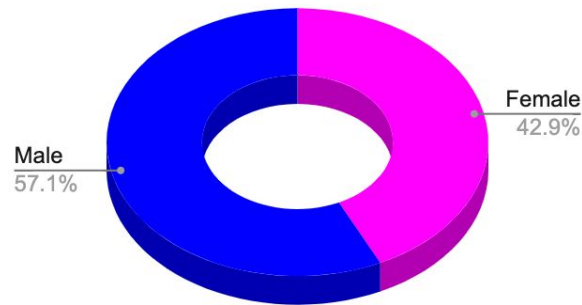
Figure 8: Gender of Participants

Out of 14 interviewees, six identified as female and eight as male. Female participants were more open to give feedback to the quality of the research and provide an opinion of what can be improved. Explicitly, one of the female founders stated that one of the questions that focused on seeking employment was irrelevant to people that never applied to any jobs. Consequently, question seven was adapted.

12 interviewees work in startups that were incorporated in Austria. Two outliers have Israel and Canada as their leading country of operations. Both of the outliers are older than 30 years old, male, and work in the most successful startups from Series A and C funding.

5.2 Big 5 Analysis

Extraversion

In the extraversion section, interviewees were asked about their ability to deal with negative emotions, feelings and thoughts. This section aimed to extract their reactionary behavior to adverse or unexpected events and identify whether successful entrepreneurs prefer to discuss their issues or keep it to themselves. It is also essential to identify if entrepreneurs should feel comfortable talking to others or not.
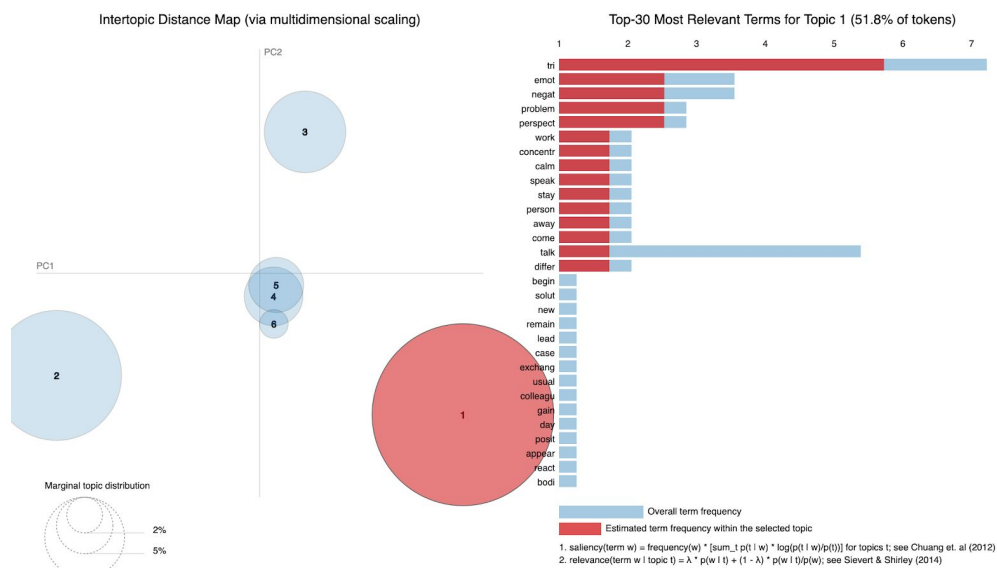
Figure 9: lda2vec Question 1, Topic 1

Most of the respondents displayed similar reactions to sharing their emotions with other people. The majority of entrepreneurs preferred to only share their negative emotions with the close circle of people, removing all of the people that bring negative emotions. Figure 7 shows that entrepreneurs view negative emotions as a problem that needs to be viewed from different perspectives, a highly pragmatic approach. These perspectives originate from their families and close friends as go-to people for emotional support. Only 1 out of 14 respondents would firstly discuss his or her issues with work colleagues.

> *"I will talk with my peer group, they are quite different from each other, so I get all different opinions and perspectives"*

This kind of behavior suggests that either entrepreneurs have a clear separation between work and personal life, or they do not have enough mutual trust to confide with their colleagues. However, all of them replied that they prefer to talk about their issues, rather than solving them by themselves, showing high affinity to extraversion.

> *"Luckily I have a few close friends with whom I share pretty much everything"*
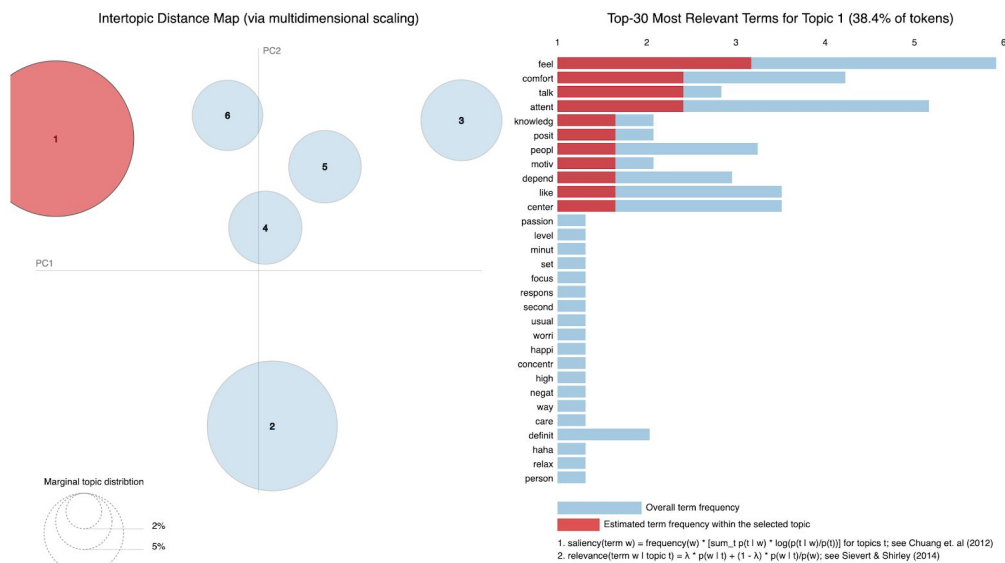
Figure 10: lda2vec Question 2, Topic 1

The second question focuses on being the center of attention. Figure 8 shows that most of the entrepreneurs are comfortable in receiving recognition for their work and feel motivated by it. Looking at the actual responses, it is noticeable that they also disliked being praised if there was no specific reason behind it, which is not seen in any topic in Figure 8. The positive feedback motivated every respondent, but only if it came from their close circle of peers. Being praised or judged by unknown people makes three respondents feel uncomfortable.

> *"Depending on attention given - can be comfortable or the opposite; whether I feel judged perhaps can be a factor"*

Even though entrepreneurs are supposed to strive in a risky and unfamiliar environment by definition, there is an overwhelming need to stay within closed social circles. These circles consist of very close friends and family, only rarely including colleagues from work. This kind of social circle is best associated with tribes, where the trust in the person is determined by the time the person has been part of the tribe and how many positive actions he or she did. This isolationist behavior is typical in a highly competitive environment, where confiding in the wrong person may hurt the entrepreneur's career. This result contradicts the idea that people prefer working in

startups because of the feeling of family, but only if their closed circle is not their colleagues, which is not explicitly specified.

Agreeableness

The questions in this section are focused on identifying the proactive behaviors of the respondents in the way they communicate with their colleagues. The aim is to figure out their ability to express their thoughts honestly and whether startup founders are the type of people that will rush in and help, or observe the events from a distance first. Another point is to understand their behavior in situations of high social pressure to do something the person does not want to do.
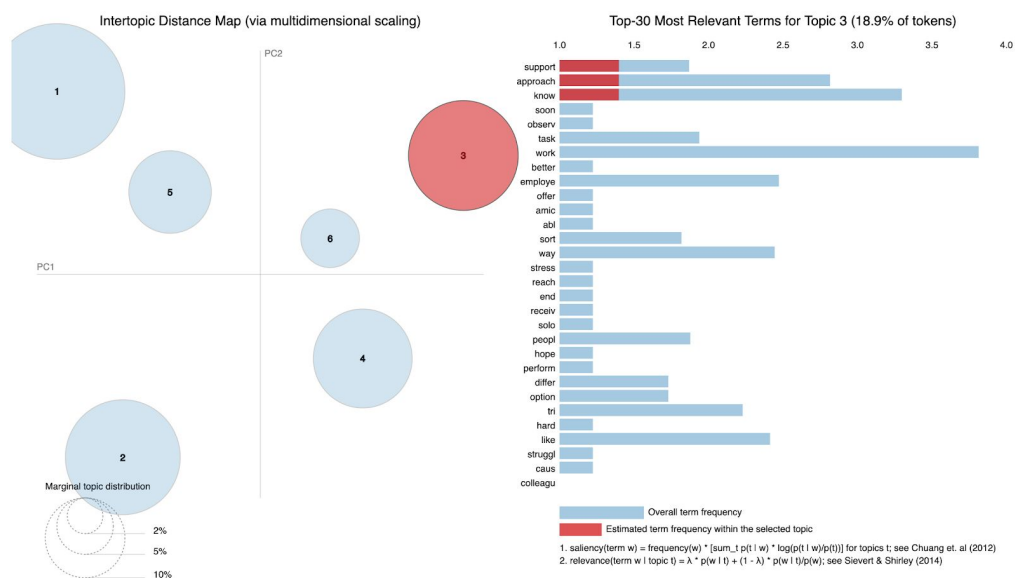

Figure 11: lda2vec Question 3, Topic 3

When respondents were answering the question about how they would directly help struggling employees at the workplace, the answers were split equally into two categories. Figure 9 shows that one-third of the entrepreneurs would directly approach and help their colleagues because they all work towards the same goal and often split responsibilities in their startups.

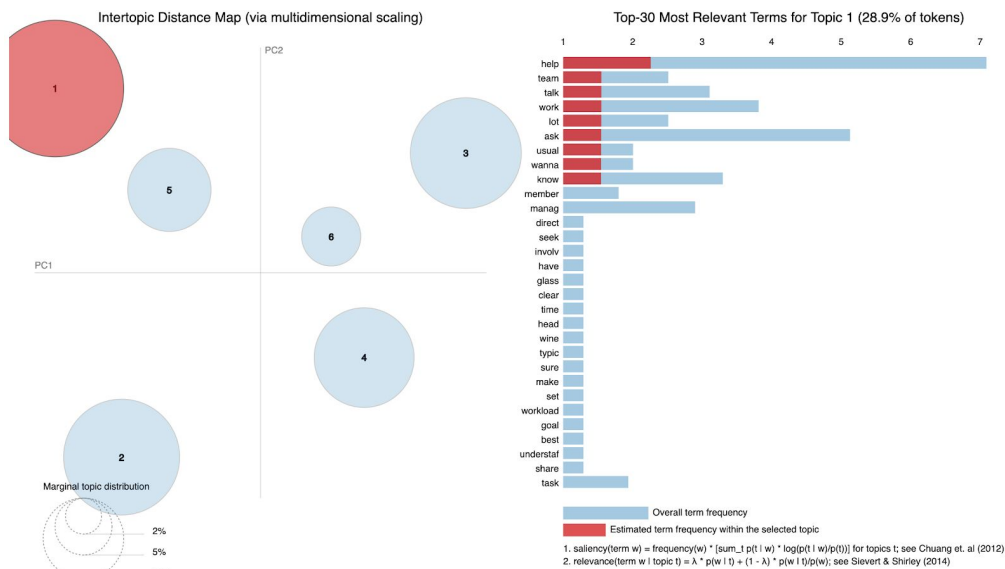*"We are usually really understaffed we share quite a lot of tasks"*

Figure 12: lda2vec Question 3, Topic 1

Figure 10 shows that the rest of the respondents would indirectly help the struggling employee, but they would prefer to ask the person's manager to talk with the subordinate. There is a typical problem that employees may perceive assistance as an insult.

> *"I talk with his/her manager and tell the manager that this team member is working a lot and that we have to find a solution"*

While this question does not help to identify a specific trait, it does show that communication is highly dependent on the culture within the workplace. It might serve as a sign that the Big 5 model may need to focus more on addressing the culture's effect on communication, rather than focusing on agreeableness that is very interconnected with extraversion.
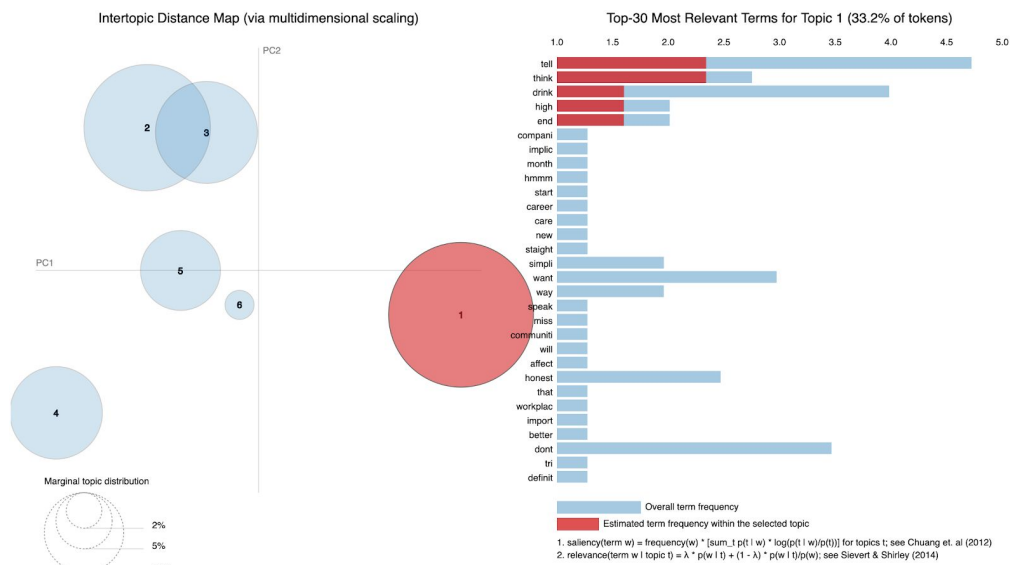
Figure 13: lda2vec Question 4, Topic 1

The second question put the respondents into the situation of social pressure, where they were forced to go out with their colleagues when they did not want to do so. According to Figure 11, almost all of the respondents would make an excuse first, but eventually, they would tell that they are too tired. All circles contain the word tell in different contexts. The similarity of context comes from the willingness to make everyone feel like part of the family. At least, in the beginning, most of the respondents will nevertheless join the event to fit into the family.

> *"I feel pressure to join as I want them to feel like family"*

There is a certain social stigma that follows the rejection of the invitation and this effect seems to be amplified in the entrepreneurship world. It results in the culture of making up excuses rather than being direct, which can be correlated to the mindset of minimizing risks, as it may affect the career.

> *"If I am really way too tired I do not feel bad to tell them so. I am sure they will understand"*

It is interesting to note that drinking plays an important role in bonding for entrepreneurs. Many respondents made jokes about this subject, frequently describing

it as a competition. This effect is likely caused by their lifestyles that made them view activities as a competition first and leisure second.

> *"I tell them that I'm tired and will therefore not join, but that I wish them a great evening and (jokingly) expect them to make me proud with their afterwork performance"*

The common trait displayed in the second question is that the respondents will only avoid an uncomfortable situation if they make an excuse first. Only a small group of people will be honest that they do not want to go. This behavior is likely common in most social environments, so it does not serve as a useful trait by itself.

On the other hand, the first question provided a useful insight that the entrepreneurs are more likely to approach a superior of a struggling employee rather than supporting him or her directly. This behavior shows that successful entrepreneurs realize that their time is best spent performing the duties they are most efficient at, so reporting an issue to a person that can solve it most efficiently is the best approach for them.

Conscientiousness

The focus of this section is to identify specific action steps entrepreneurs would take to fix their mistakes and increase the performance and education of their team. The aim is to figure out their decision-making processes, what it was influenced by and how did respondents know that the decision they made was right. Another goal is to see what entrepreneurs prioritize over other activities and why.
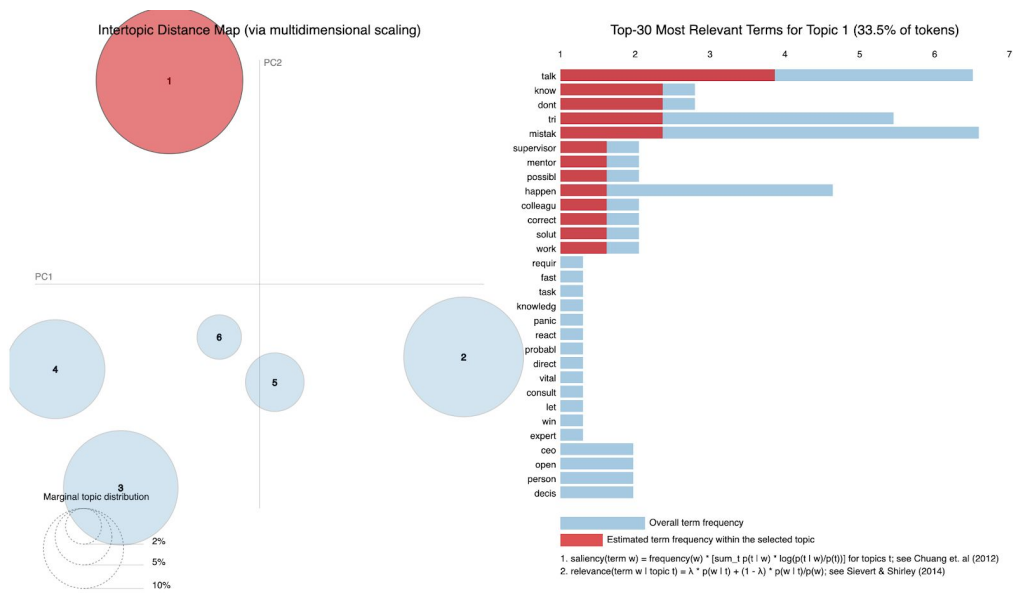
Figure 14: lda2vec Question 5, Topic 1

The first question asked the entrepreneurs to imagine that they made a big mistake at the workplace that led to significant damage. The respondents needed to describe the action steps they would take to solve this problem. Most of the entrepreneurs took a pragmatic approach, focusing on mitigating the damage. Figure 12 shows that two-thirds of them would immediately talk to the top management or mentor about the issue.

> *"Honestly I don't know, hasn't happened yet so I don't know how I would react but I would probably panic and talk to my CEO directly about it."*
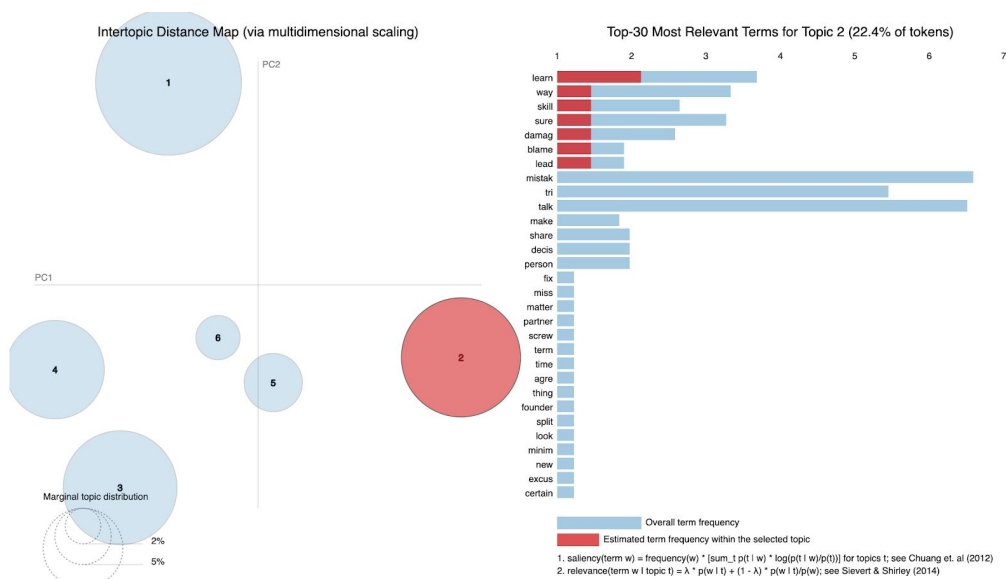
Figure 15: lda2vec Question 5, Topic 2

Figure 13 shows that smaller part still talked about their mistake with someone, but focused their answer on the way they would solve the problem by themselves, most likely driven by confidence that they have enough skill and knowledge.

> *"I hate making mistakes but usually taking full responsibility - so i check why the mistake did happen and try to analyze and break it down to avoid future mistakes."*

Overall, all respondents agreed that the failure would also result in a meaningful learning experience. None of the respondents chose to shift the blame, with a small part of the respondents ensuring that no one else would be blamed for their mistakes.

> *"This has been a good lesson for me then. It's always ok to admit your fault, it's only not ok not to learn from the lesson."*
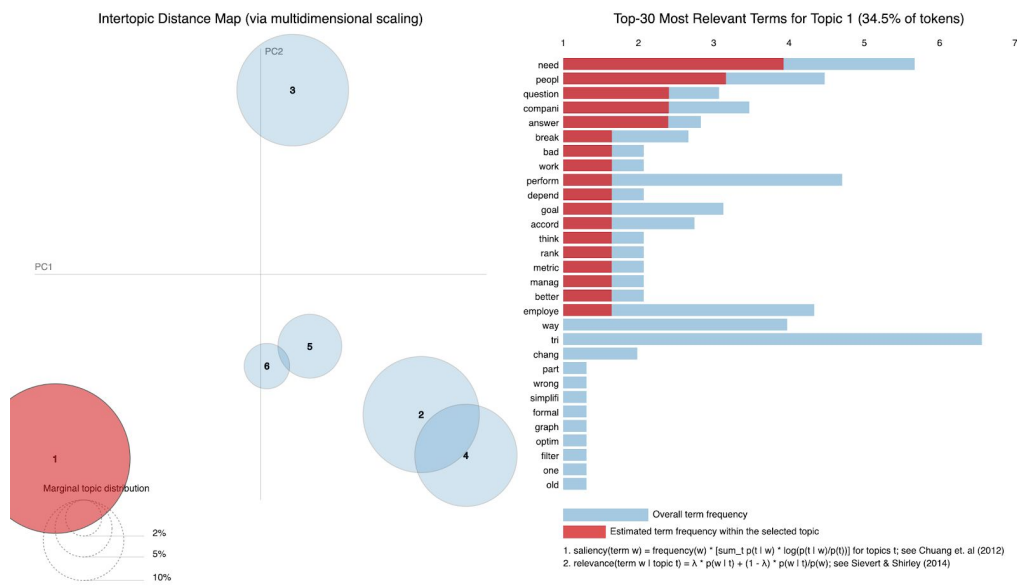
Figure 16: lda2vec Question 6, Topic 1

The second question focused on the action steps the entrepreneurs would take to increase the performance of their team, with the core idea to understand the factors they take into consideration. The priorities were split equally into two categories. In the first category, the respondents focused on analyzing the business needs, breaking down the problem and mapping out solutions, as shown in Figure 14.

> *"Problem needs to be broken down. What works bad? What works well? This way the whole process can be formalized on graph or in words, which simplify optimization."*

Figure 17: lda2vec Question 6, Topic 3

The first category did not mention how they involved their employees in decision making. Figure 15 shows that the approach of the sec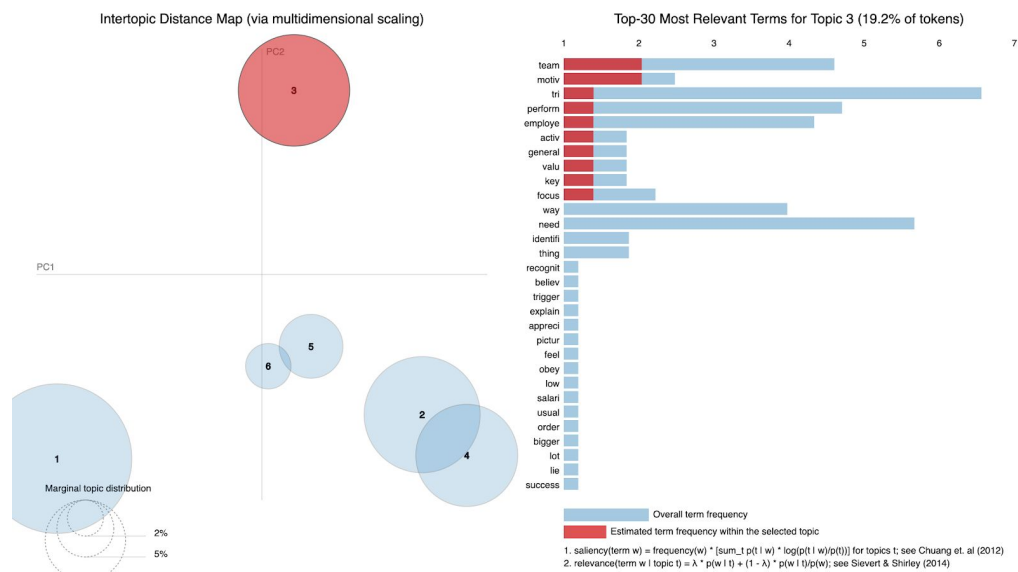ond group, which represents one-third of the sample, was people-oriented. They focused on identifying the strongest skills of each teammate, brainstorming new ideas together and distributing responsibilities according to the strength of the team. When the employees are not treated in a way they would be in a corporate environment, it led to higher satisfaction.

> *"After that [including teammates in decision process], you focus on explaining the bigger picture and "why" we're doing the things that we're doing so they feel included and not as if they just need to obey orders."*

All of the respondents involved their employees in decision-making at some point. As mentioned previously, culture plays a significant role in the extent to which they listen to the opinion of employees. Furthermore, successful entrepreneurs are conscious of the mistakes they make and do not hesitate to contact their superior immediately. Interestingly more respondents see more value in talking about the issue with other people rather than solving it by themselves.

Neuroticism

Neuroticism section focused on identifying how entrepreneurs deal with rejection and where they direct their emotions. This is the only section where two questions are complementary to each other because the aim to understand the complete flow of the negative emotions. The three main priorities were to understand how entrepreneurs reacted to rejection, how they dealt with it internally and then externally.
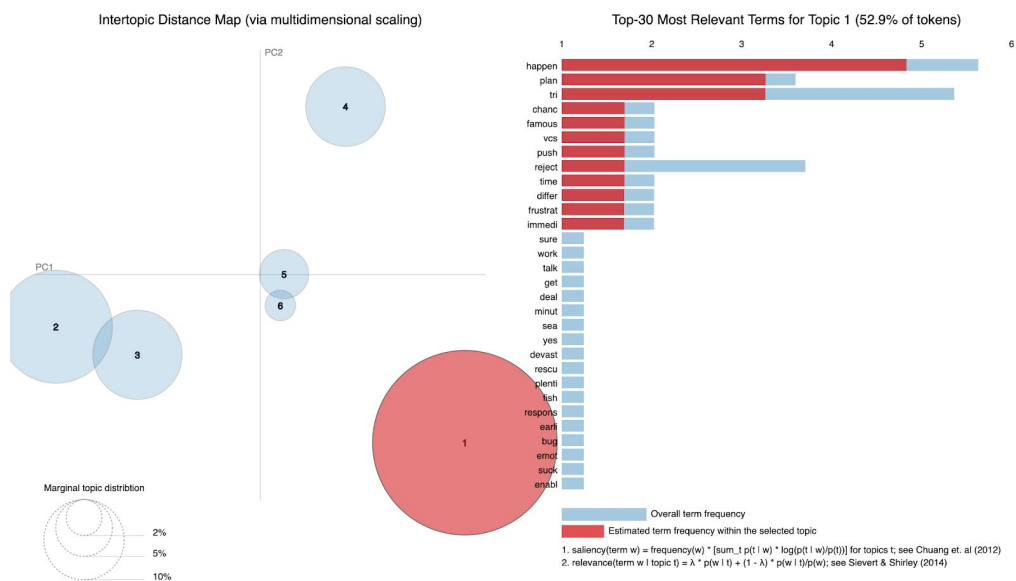
Figure 18: lda2vec Question 7, Topic 1

The first question focused on internal emotional control. It put entrepreneurs into a situation, where they applied for VC funding, but were rejected at the last second. According to Figure 16, the most common emotional response was to plan the solution and push through in some creative way. Many of the respondents mention that rejections cause much frustration, but they are quite common.

> *"Rejections can always happen - often times it enables you to get creative"*

Another typical response that is not well represented in lda2vec for Question 6 is that entrepreneurs will immediately try to either reapproach or reapply to VC or, at the very least, identify what went wrong.

"I will ask them why? What's the reason behind why they reject me? If they say I don't fit into their corporate culture, then I will look something new"

"Review - ask to understand to the extent the reason for rejections and move on…"
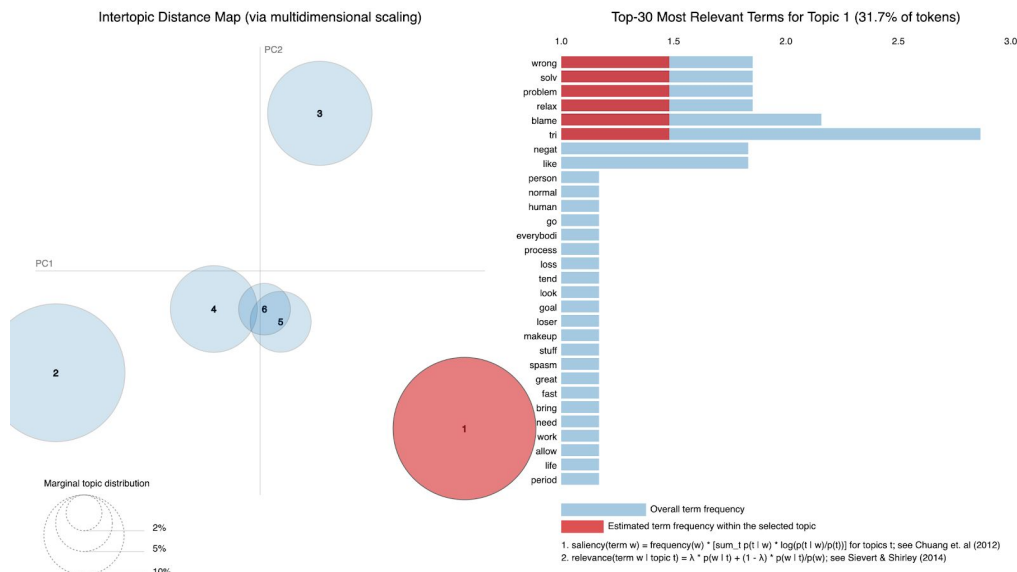
Figure 19: lda2vec Question 8, Topic 1

The second question continued the first but focused on the external flow of emotions rather than internal. The idea was to understand whether the entrepreneurs are more likely to blame themselves or others, showing their emotional maturity. Figure 17 and its alternatives did not prove to be useful to answer this question due to the lack of data and only showed that entrepreneurs try to 'relax' when dealing with problems.

"Negative stuff is like spasm, need to relax. And whatever works to bring you there fast is great."

"Everybody tends to make mistakes, that's normal and what made us human."

Looking at the content of the interviews with the keywords 'blame' and 'myself,' it becomes apparent that entrepreneurs are most likely to blame themselves for their

mistakes. This notion is most likely an outcome of entrepreneurial culture, where failure is not an extraordinary event.

> *"Arguing myself what a joke that world is and that others did not deserve us anyway"*

Successful entrepreneurs score very lowly in neuroticism, with their high ability to resist stress from failures and rejections. Many entrepreneurs use humor to describe their failures, showing that they are very effective at using different coping mechanisms as a way to deal with negative emotions.

Openness

The last section focused on identifying how open the entrepreneurs are to the new knowledge, in what they manage their careers and what kind of approach they take to implement their ideas. The trait of openness is perceived in Big 5 through the lens of experience. In other words, how open the entrepreneurs are to new skills, information and others.
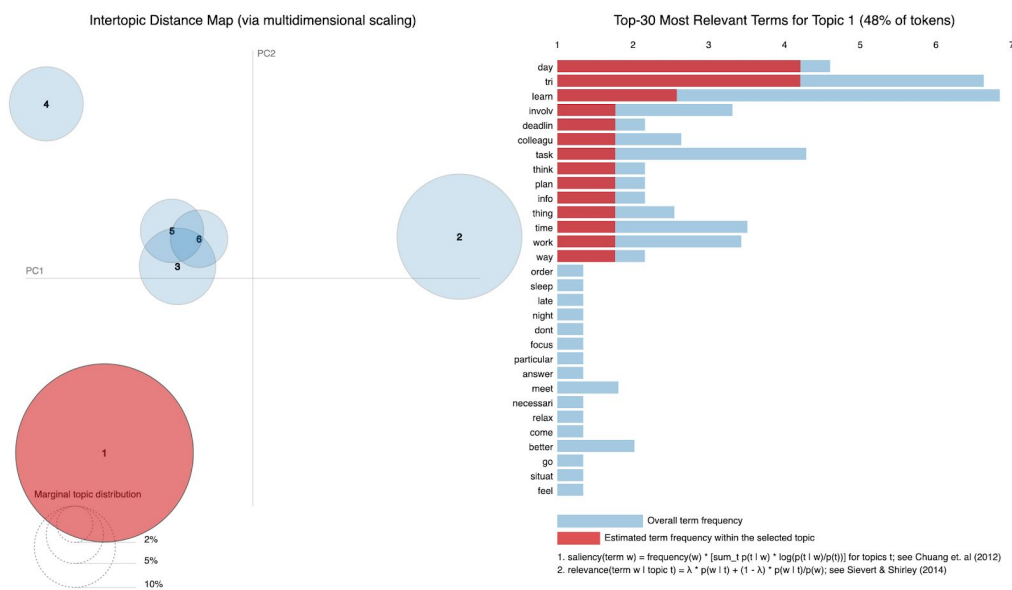

Figure 20: lda2vec Question 9, Topic 1

The first question focused on the way entrepreneurs use their free time, during intense project times, when they do not currently possess enough skills and to what extent

they involve other people. Figure 18 shows that two-thirds of entrepreneurs prefer to learn new skills but only involve other people if there is a deadline present.

> *"I don't involve others too much, however if there are deadlines to be met I would involve a colleague of mine in the task."*

Other topics in Figure 18 did not yield useful results, but using the keyword 'task' in the text showed a common trait of creating lists and writing down learning priorities.

> *"Try to understand where I need to educate myself further. Write lists with tasks and try to set priorities."*
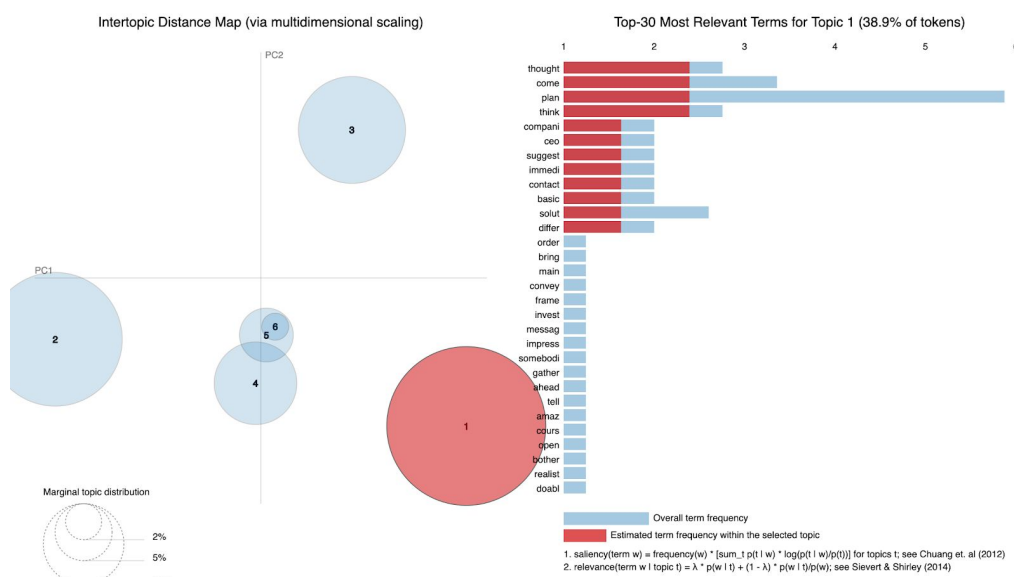
Figure 21: lda2vec Question 10, Topic 1

The second question focused on identifying how often entrepreneurs came up with new ideas and what action steps they took to plan and implement them. A majority of respondents in Figure 19 will at least individually plan out their idea if they thought it had value. Some of them would suggest it directly to the CEO. Successful entrepreneurs are more likely to work independently if they chose this path.

> *"After all ideas are great and everyone can have one but before going to the CEO you should make sure it's doable and realistic."*

A small group of people preferred to firstly discuss their ideas with their colleagues to get feedback and perspective. These people are more focused on bouncing off their solutions from colleagues and changing ideas based on the opinions of others.

> *"I would basically try to contact someone immediately, get some first opinions, get some thoughts on it see how maybe it can even be adjusted into a better solution."*

To sum up the traits from both questions, successful entrepreneurs are more likely to develop their ideas, sometimes employing people with different perspectives to improve it. No respondents refused to develop their ideas and most of them provided different techniques they use to work on their projects more effectively. It is interesting to know that entrepreneurs are way more likely to involve other people in their projects if time pressure or deadlines are present.

6   Discussion

Before defining the successful persona of an entrepreneur that will support venture capitalists in identifying the best candidates for investment, it is essential to highlight that the findings implied that agreeableness did not serve as a useful indicator of entrepreneurs' success. This conclusion supports the issues raised by Zilig et al. (2002) that agreeableness is a narrower version of extroversion. Big 5 personality traits are supposed to be independent of one another, but the results of the research support that a more useful factor should substitute agreeableness. It also creates a contradiction with the research of Kerr et al. (2017) that stated that entrepreneurs are more likely to score lower than average in agreeableness. This trait is heavily situation-dependent and not genuinely independent.

Dominant Traits in Entrepreneur
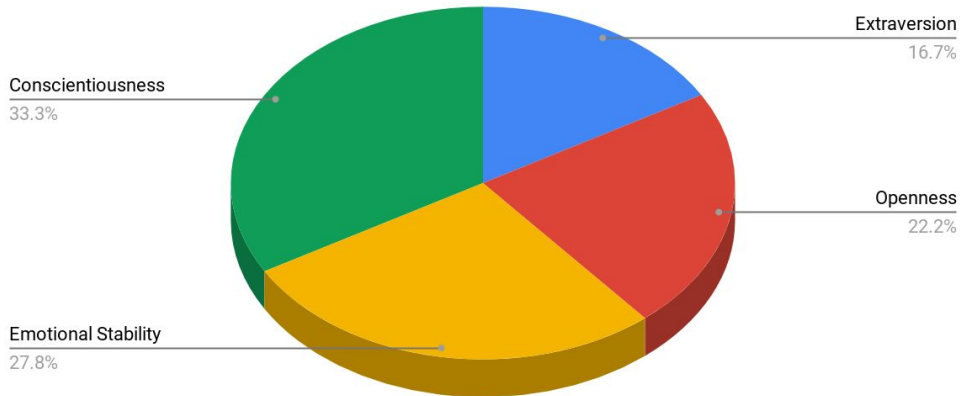
Figure 22: Dominant Traits in Entrepreneur

In the typical Big 5 based test, successful entrepreneurs will score the peak in conscientiousness, high in openness, higher than average in extraversion, average in agreeableness, and close to a minimum in neuroticism (or the opposite at emotional stability). Figure 22 shows an approximation of the value of each trait, excluding agreeableness, to predict the success of entrepreneurs with venture capital investment.

Conscientiousness
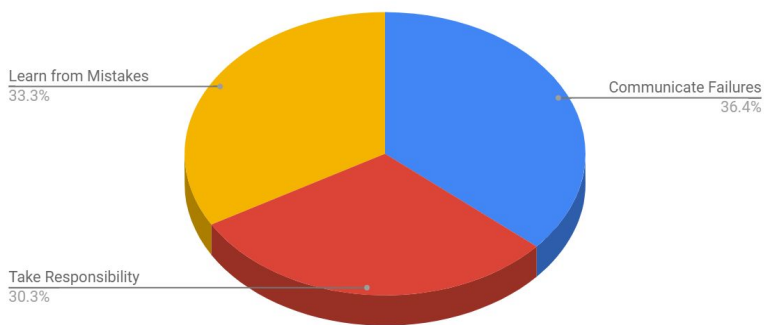
Figure 23: Conscientiousness

Neuroticism
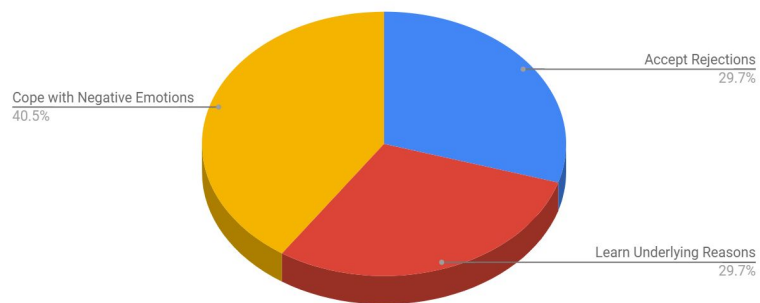
Figure 24: Neuroticism

Openness
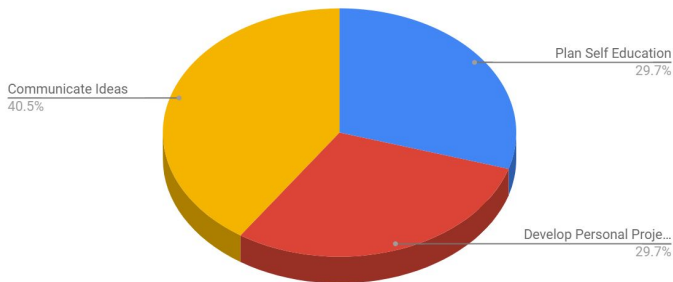
Figure 25: Openness

Extraversion
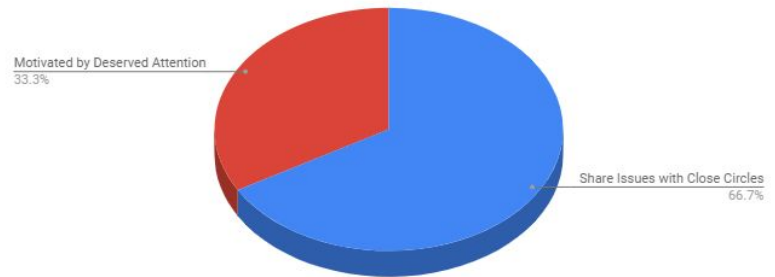
Figure 26: Extraversion

Connecting all of the most significant characteristics from each trait, a successful entrepreneur is a risk-taker, that takes responsibility for every mistake he or she made (Figure 23). This person is conscious enough to report the issue immediately to the top management and extraverted enough to get help from a close group of people, most likely from non-work friends or family (Figure 26). Furthermore, they should perceive rejection as an inevitable part of their work and perceive failures as lessons (Figure 24). The ability to resist negative emotions by utilizing coping mechanisms is an integral part of scoring low on neuroticism. An entrepreneur has to find a personal way to vent negative emotions and simultaneously to be able to quickly self-educate to cover the weaknesses (Figure 25). Lastly, when it comes to social interactions, continually being mindful of competition and career implications is a crucial point to consider when interacting with colleagues, prioritizing a sense of self-interest over the family feel that is not present in most of the startups.

Unexpectedly, entrepreneurs are unlikely to show affection in the workplace and will hide their true feelings from their colleagues due to the sense of competition (originating from tribal behavior) and social stigmas.

The research confirms that the Big 5 model is not the most useful approach in assessing entrepreneur persona since it does not include qualities related to competition. Cobb-Clark & Schurer (2012) determined that persona stays constant over time, therefore the model is valid, but the factors it utilizes have to be changed

because the economy influenced by entrepreneurship is different from the one decades ago.

The use of the Big 5 model in the context of entrepreneurship also contradicts the research of Rauch & Frese (2007) that rank achievement above dependability. In the risky startup environment, where the departments and duties are interconnected, dependability has vital career implications, and achievement is expected at the workplace due to the broad scope of responsibilities.

To sum up the contribution to the overall research, the Big 5 traits have to be adapted to be fully applicable for entrepreneurial use cases. The research indicated that this model might be outdated for this specific use-case. Due to the small sample size or incorrectly phrased questions, agreeableness did not yield any distinct traits that could have been mentioned in the discussion. For future research, this trait should either have a different focus or interchanged with a different trait less correlated to extraversion.

7   Limitations

The most significant limitation of the research is the lack of language data that is crucial for machine learning algorithms. This resulted in some questions yielding less useful results than the others, mainly if the questions were either based on a negative trait or formulated with a negative connotation.

Besides, the Big 5 traits are not truly independent of one another, and many correlations can be deduced. For example, higher levels of neuroticism lead to lower extraversion, or higher agreeableness is proportional to higher extraversion. Perhaps, enneagram of personality, where the qualities are initially interconnected, would be a more useful approach, but it would be complicated to collect enough language data since the most common adaptation of this method holds nine traits.

8   Conclusion

The primary purpose of this research was to deduct the successful persona of an entrepreneur that is most likely to receive and succeed with venture capital

investment. The research was innovative in its fundamentals since the interviews were successfully analyzed with the use of natural language processing. The words from the interviews were embedded into vector values and Latent Dirichlet allocation was applied for topic modeling and visualization. The mixture of these methods (with the use of the tool lda2vec) allowed to create a visual representation of language data that was later interpreted by the researcher. The level of human bias commonly prevalent in qualitative research was minimized through this supervised machine learning technique that, in the future, will return higher degrees of accuracy with the aggregation of more interviews.

The most important findings of the research are that the paper proves the overall validity of the Big 5 model. The main traits are useful predictors of success and were effective in the use case of this research. However, it was also identified that the model is outdated in its view of personality traits because it does not take critical entrepreneurial qualities such as leadership or competition into account. Furthermore, the research confirmed that one of the main traits of the model agreeableness could be viewed as a narrow version of extraversion that excludes affection but maintains social behavior. This assumption disqualifies one out of five traits as a useful indicator of success for entrepreneurs.

On the other hand, other parts of the model were instrumental in deducing the traits of a successful entrepreneur. It confirmed that entrepreneurial persona is essentially a risk-taker that can take full responsibility for his or her actions, effectively utilizes coping mechanisms to handle stress, possesses the traits of tribal behavior and is equally capable of working independently and with others.

Natural language processing and the results from the Big 5 questionnaire were mostly a compelling combination that returned sensible results even with the relative lack of data. The most significant limitation of the natural language processing was to assess the neuroticism trait, which is inherently negative. The model was not able to provide deep enough results, so this section had to be completed by using the words with the highest vector values as keywords in the interview text. As mentioned earlier, some aspects of the Big 5 model are outdated to assess new phenomena of entrepreneurial personality and no statistical research was conducted to assess what makes a successful entrepreneur.

The future direction of the research should focus on collecting more language data by surveying entrepreneurs that operate in different countries, change agreeableness to a more useful factor (a mixture of competition and leadership) and figure out an automatic approach to label the topics that are modeled with the use of Latent Dirichlet allocation.

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Appendices

Interview transcripts

Interviewee 1

Question 1. I would say the one dealing one negative emotions one of the things that I do is definitely talking you through with people because it helps the process so. What's that I definitely have an instant reaction of. Just trying to process it myself and then as soon as I feel like I'm settled and balance I definitely talk it through with people still make sure that I got everything.

Question 2. I would say that I definitely feel very uncomfortable being the center of a paid attention and I try to avoid that which kind of goes against. The factory in peril with the fact that I. Enjoy recognition for my work but I don't necessarily like. A lot of attention however in the rare moments when I kind of have the courage to subject myself so that I do feel like it energizes me and I really enjoy. Being able to share something with people.

Question 3. Approach the struggling employee I know that reaching out can be very very hard to do and I know that in the end most people would like to receive some sort of hope solo. I would try to find. An amicable way to approach and to offer different options for him to get support in his work so that he can perform better and then also not go to me all the stress that not being able to do our tasks can cause.

Question 4. I would tell them someone that has created high 3 high here of missing out so I think that even though it can be counterproductive and I think it can affect me in some ways honestly speaking I would be willing to go out with my coworkers and just try to get better. Communicate community at the workplace is something that's very important to me so I 80. I definitely think in the end what end up going.

Question 5. I think that if said mistakes would imply a severe consequences like revenue damage my first step would be to talk to an adviser and manager someone that would be able to advise me in this situation and make sure that in any way that I can and then we can the situation is controlled even though eating bowls maybe me. Being more vulnerable and then of course trying to see how to never make it happen again because honestly the types of situations really traumatized me so I tried to make sure that it's never happened again.

Question 6. In trying to set priorities I try to identify how every single a DVD and task is interlinked and what are the consequences of every single one of them so that I'm efficient as possible in a way that I don't thing for example that something can be done before having the member said you get enough to do something stolen. I try to make sure that everything. In an efficient way and. All regarding my abilities I definitely. Before starting anything make a map out of what's going to happen and according to dad tried to my by Tom time resources but then also like. How I performed in doing that before and see what else I need to involve and. Yeah try to go in a way that makes sense for me like starting with a proper education that can definitely affect performance in the demon finishing on how based on that we can change the goals.

Question 7. My immediate reaction is definitely a lot of frustration and asking why how this could happen and also being frustrated that I wasted so much time and very very disappointed and I don't think I would take just a beat to wallow in that but then. Immediately he tried to come up with a different plan meaning approaching different companies starting reapplying. And also trying to get an answer and feedback as to why this has happened so suddenly consider it lasted 2 months.

Question 8. I would say my negative emotions would be directed both at the company for basically being able to communicate very very poorly and basically for what it was called dracaena lonely along. But then definitely there's also in the media I knew I maybe wasn't good enough for it since he is my dream job or I knew that something I would mess up at some point so I would definitely be mad at myself for it.

Question 9. I definitely think the one of the best ways to learn new things to basically watch people do them in better ways and then ask them and try to get as much info from them so I would say that with my time I would contact a mentor someone that's really good at what I'm doing and try to get a lot of info out of them and try to get advice as to what I can do and then try to create as much of a plan for myself as possible to be efficient and learn more. Fast.

Question 10. I think if I had a new solution I think it's something that would definitely work I would basically tried to contact someone immediately get some first opinions get some thoughts on it see how maybe it can even be adjusted into a better solution see how may be there's actually things that I haven't thought about and as soon as I have basically run this through different people with different perspectives I would come up with a plan and see how we can be implemented.

Interviewee 2

Question 1. No external communication. Just concentrate and find the source of physical discomfort on the body, concentrate there and if something negative appears, it just go away.

Question 2. I feel comfortable. Don't really care either way.

Question 3. Your employee imply some sort of management position. It is mandatory to address cases like this, track down the source of the issue before an incident happens, so definitely active approach to start talking.

Question 4. If I don't feel like it, I would not go. Follow up invitations can be addressed with polite another time. If too annoying, I can always say that I will come later and not to.

Question 5. That is the situation where you would put yourself on purpose. If not qualified, research first and ensure you understand what you are doing. If mistakes happen come up with a plan to mitigate and own up.

Question 6. That depends on what is the performance of the team. Problem needs to be broken down. What works bad? What works well? This way the whole process can be formalized on graph or in words, which simplify optimization. With change of strategic goals, it is pretty much the question what was wrong with old ones. There is neve a need to break everything, just bad parts need to be filtered out.

Question 7. I would say "it sucks"emotional response might not really happen or I will push it down early, so it would not bug me much.

Question 8. It is more about relaxing. Negative stuff is like spasm, need to relax. And whatever works to bring you there fast is great.

Question 9. If I am not prepared to fulfil my tasks, I will prepare to fulfil my tasks (= Unless I just go to the toilet and thing that life is pain.

Question 10. Prototype if possible; prepare business case: will save you $xxx because of _____. It will take $yyy to implement and can be done in *time*. As the bonus calculate how long money saved will take to pay for the project. If you can answer to all those questions, don't see why things would not move forward (unless it is office politics or budget).

Interviewee 3

Question 1. Talk to my inner circle, complain to my inner circle about others, sports, journaling, meditation, beach walks, playing with my dog

Question 2. you get used to it - hated it in the beginnings and my first time on stage was so hard for me i almost puked. 6 years later I still don't enjoy it, but I see it as part of the job and try to make the best out of it.

Question 3. I usually see it and ignore it. I know we all have a lot on our plate and mostly i feel i don't wanna help - I know it sounds harsh tho and I probably wouldn't want to work for myself

Question 4. If i really dont wanna go, i dont. of course i feel pressure to join as i want them to feel like family, but if i really dont wanna go, i wont.

Question 5. i hate making mistakes but usually talking full responsibility - so i check why the mistake did happen and try to analyze and break it down to avoid future mistakes.

Question 6. no idea - start somewhere. trying to break it down from strategy to operational task

Question 7. trying to see if i can rescue something, if not move on with another plan - plenty of fish in the sea. but yes i would be devastated for a second or so.

Question 8. myself, my team

Question 9. usually if I'm exhausted from work I tend to do not-work related stuff like sports, reading, watching netflix, meeting friends

Question 10. sketching the plan first, then spare it with my business partner/mentor, then test it

Interviewee 4

Question 1. Breathing, talking to girlfriend/friends, listening to music, skatboarding

Question 2. Some kind of mix of happiness, worrying and high concentration

Question 3. Depends on the level of our communication. Most likely I'll help if I have no prioritized things to do

Question 4. I say that I'm tired and maybe go next time. If this is the only reason and they really want to go, I will consider joining them for one drink. I rarely feel pressured cause I see nothing bad if some people want others to go with them and ask for that and some people just don't wanna go.

Question 5. This has been a good lesson for me then. It's always ok to admit your fault, it's only not ok not to learn from the lesson. So the next steps will be to find out what I could have done better

Question 6. I'd read some articles and perhaps books about this question. Talk to people who have similar experience

Question 7. First of all - no stress, things happen. I would probably take a walk or just leave this question till another day, so I can think of it with the clear mind

Question 8. Basically I try to relieve these emotions (through breathing for instance, or talking to someone who can listen and maybe even help)

Question 9. I don't like to involve other people into my problems. I would learn/strengthen my skills. If this doesn't help I will contact my friends/colleagues, who have had the same experience and ask for advice or to help

Question 10. I'll come up with a plan first, not detailed though. I then talk to other people to hear their opinion (it's often ve-e-ery helpful advice you only see the problem and solution from one perspective). The together or alone with newly gained knowledge I will improve the plan or perhaps write a new one

Interviewee 5

Question 1. doing yoga or running, talk to family/ good friend

Question 2. prior to being in the center I am often nervous, during the situation it energizes me - as long as I am well prepared for what I need to present

Question 3. talk with the person, find out how I can help best, making sure teams are set up in a way they can manage the workload

Question 4. often I still go, because it re-energizes me when I am around people. If I am really way too tired I do not feel bad to tell them so. I am sure they will understand

Question 5. Look for ways to minimize the damage, talk to co-founder/ CEO about how not to make the mistake again

Question 6. sourcing ideas from team members - then strategically discuss with leadership team where to set the focus - then ask employees/ volunteers to set own goals, and plan on how to achieve them.

Question 7. very hard to explain as I've not been in this situation.

Question 8. if I would probably blame myself or the investor for missing out on the opportunity to invest in us

Question 9. talk to my mentors - try to understand where I need to educate myself further. Write lists with tasks and try to set priorities

Question 10. test and error - try it out quickly to get response and adapt what does not work

Interviewee 6

Question 1. I try to stay calm and not react emotionally. I also try to put myself in the position of the person to know where these emotions come from.

Question 2. maybe little bit uncomfortable

Question 3. I talk with his/her manager and tell the manager that this team member is working a lot and that we have to find a solution

Question 4. I am honest and tell them that I am too tired and will join next time

Question 5. I would talk immediately with my manager and tell him/her what I did

Question 6. 1) Conduct a business analysis to define new profit possibilities or strengthen current profit center 2) Invest in education to improve the knowledge of my employees and support them 3) Include in this process relevant team members (to prevent operation blindness)

Question 7. I would take it professionally and ask for feedback why they decided not to invest.

Question 8. Unfortunately to my boyfriend

Question 9. I would spend this time with my boyfrien, family or friends if possible

Question 10. I would present it to my manager and if it is fine for him I would start implementing it

Interviewee 7

Question 1. Luckily I have a few close friends with whom I share pretty much everything.

Question 2. I'm pretty comfortable with that now because I've been through many situations where (due to my work) I was put into the centre of attention, however in the beginning I didn't particularly enjoy it. I think

Question 3. Always ask how I can help after all we're working towards the same goal and as we are usually really understaffed we share quite a lot of tasks

Question 4. I outdrink them all.

Question 5. Honestly I don't know, hasn't happened yet so I don't know how I would react but I would probably panic and talk to my CEO directly about it.

Question 6. First of all if the performance is low it usually has a lot to do with motivation of the employees - some people are motivated by salaries, some by recognition / appreciation and some have other triggers. I believe the key to a successful team and its performance lies in motivating your employees in a right way. After that, you focus on explaining the bigger picture and they "why" we're doing the things that we're doing so they feel included and not as if they just need to obey orders.

Question 7. Personally I think I would try with another funding programme. It could be your idea is recognized as investment worthy at the second doors you knock on.

Question 8. Usually myself and I also like to vent to my close friends / colleagues - we do it collectively.

Question 9. I don't involve others too much, however if there are deadlines to be met I would involve a colleague of mine in the task. If it's already late in the night and no particular deadlines I would just call it a day and rather get some sleep in order to be more focused the next day.

Question 10. If the company is known for not listening to any suggestions I would not bother with any of it. If the company is open to suggestions I would of course first make a detailed plan and then present it to the CEO. After all ideas are great and everyone can have one but before going to the CEO you should make sure it's doable and realistic.

Interviewee 8

Question 1. Keep it for myself

Question 2. Comfortable, but try to sometimes also involve others

Question 3. Observe but support soon

Question 4. Honest with it and leave

Question 5. Could lead to excuses and split the blame but certainly learn new skills

Question 6. Communication is key

Question 7. has not happened yet. might push with same vc again

Question 8. arguing myself what a joke that world is and that others did not deserve us anyway

Question 9. learn oneself or find someone who can do better

Question 10. come up with an amazing plan and impress without telling someone ahead

Interviewee 9

Question 1. i do sports. a lot.

Question 2. depends whether its positive or negative center of attention

Question 3. obviously help or ask someone else closer to that employee to help - depends on the hierarchy

Question 4. i tell them no. im always staight

Question 5. learn missing skills for sure but at the same time also try to fix the damage, both personal and in terms of the thing i screwed up

Question 6. seriously? Thats the most broad question, how should one be able to answer this concisely?! Depends on so many factors. i guess i would try to find a metric which is important (performance of some sort maybe) and rank possible solutions according to this metric? :shrug:

Question 7. my funding plan already has alternatives in place

Question 8. myself

Question 9. all of the above

Question 10. semi-detailed plan first, then high-level management

Interviewee 10

Question 1. speak with myself, speak with other, clear mind, try to calm and think of ways better the situations

Question 2. depending on attention given - can be comfortable or the opposite; whether i feel judged perhaps can be a factor

Question 3. approach, speak with him/her and friends and colleagues , try to understand which barriers can be removed together

Question 4. no pressure although aware that leisure places can benefit the work relation and lead to positive results

Question 5. no blaming - making sure we all learn from this and share openly all matters of decisions leading to that - agree on ways with the partners

Question 6. when forming strategy with partners the priorities are set as well as room for flexibility of sort and various scenarios

Question 7. review - ask to understand to the extend the reason of rejections and move on - try again andin same way as well as new ways

Question 8. i honestly try to allow them to be present for periods and move on. as life do.

Question 9. def involve others :)

Question 10. come up with main frame of my thoughts to put in order. invest time in conveying the message and bring it into discussion

Interviewee 11

Question 1. talking to other people

Question 2. at the beginning I feel sometimes uncomfortable and nervous (depends on the group of people), after a few moments it becomes better

Question 3. ask for help, ask for a break together,

Question 4. Hmmm...I would say, when I start at a new company I would rather go out for a drink due to career implications. After the first month I don't care about that and simply say NO...I go only out for a drink if I want to

Question 5. (1.) talk openly about knowledge to your supervisor (2.) if I have to do the task: try to learn the required skills as fast if possible (3.) if I then make a mistake then go again to the supervisor and talk about the situation

Question 6. ....

Question 7. ...

Question 8. 1. company, 2. myself

Question 9. ...

Question 10. ...

Interviewee 12

Question 1. trying to find the good in it and growing from it. Typically not letting bad news too close and keeping it to myself.

Question 2. Mix of excitement, pride and pressure

Question 3. Seek direct involvement and talk to the team member. Asking him to take time to him/herself and get a clear head first. Also typically having a glass of wine together ;)

Question 4. Happy to spend time with colleagues. If I don't feel like having a drink, I'll blame it on work or simply be quite frank about it.

Question 5. Talk to mentor

Question 6. Brainstorm, involve everyone in the process and gather ideas. Structure and execute

Question 7. Always have a Plan B. Rejections can always happen - often times it enables you to get creative

Question 8. Myself and dealing with it by doing sports

Question 9. learn on the job. nobody has a perfect skill set - learning by doing works pretty well.

Question 10. contact somebody immediately and gather thoughts and inputs

Interviewee 13

Question 1. I usually keep it to myself in the beginning and try to work out a solution to the problem leading to negative emotions myself. This works in 90% of the cases within a few days. For the remaining 10% I will talk to colleagues or friends about it and try to gain new perspectives through the exchange.

Question 2. I feel responsible and focussed usually. The level of comfort depends on the setting and how the first few seconds/minutes go - if I'm talking about something that I'm passionate and knowledgeable about, I definitely feel comfortable & energized.

Question 3. Pretty straightforward. I ask the person whether I/we can help in any way, outlining different options.

Question 4. I tell them that I'm tired and will therefore not join, but that I wish them a great evening and (jokingly) expect them to make me proud with their afterwork performance.

Question 5. First I try to work out possible solutions to correct the mistake myself. In an ideal world I can share the mistake with my colleagues and can already suggest ways to correct it. If I don't find any solutions myself then I will talk to colleagues, mentors, friends about it and try to work something out.

Question 6. Very difficult to say without knowing what kind of team (general/specialized) and company. But in general I would try to identify the activities that add most value and try to focus more of the team's energy on them while stopping activities that bring little value.

Question 7. First I talk to the famous VC to find out why it got rejected last minute, so that I can find out whether there is any chance to still get it done and if not make sure this does not happen again with other VCs. If there is no chance with the famous VC, I would get back to work and try to get a deal with other VCs.

Question 8. Depends who was at fault in my opinion. If they really acted in bad way morally I will tell them of my disappointment/disapproval and make sure to tell others about it, in order for them not to have similar experiences. If the mistake was on our side, we obviously try to correct it.

Question 9. I'm not going to change my career plan because of one complicated day at work. I usually will use my free time to relax and reflect on other things than work. Most probably I will get used to the situation over the coming days. If I still feel unprepared after several days, then I would start to think about solutions. Depending on whether I would actually like to dive deeper into this field, I would either try to learn the necessary skills or talk to my colleagues about some of them taking over these tasks.

Question 10. I usually discuss new ideas with colleagues and thereby try to get some more perspectives on them. With this input I then try to develop them further myself, before setting up a project team to execute.

Interviewee 14

Question 1. I will first come down, and reflect what's going on, and what's the problem, try to solve the problem asap. But if this is something serious, and I can't let it go. I will talk with my peer group, they are quite different from each other, so I get all different opinions and perspectives. This is like changing perspectives, we need it in order to understand others. I try to stay away from negative persons.

Question 2. I am Leo (star sign), so I always like to become the center of attention, haha. Either by what I am doing or what I am talking to get people's attention. I am a funny person, so people like to talk with me because they feel motivated and with knowledge plus in a very relaxed conversation, full of laugh. It motivates me and give positive feedback and enjoy some fun moment, work is not necessary to be boring.

Question 3. I will try to tell him or her take a break, go home and have a sleep. Haha! Under high pressure the quality of work can't be guaranteed. It's actually also depending on the person. Some people feel insulted if I am helping or ask others to help, some feel happy, so really case by case.

Question 4. I normally will join for a drink, hahahaha! Life should be fun! But if I am really tired, I will tell him, I will join later after I sleep some hours, or next time. I am very spontaneous, anything could happen.

Question 5. That never happens to me. Because I am the person if I don't know, I won't make vital decisions, I will consult experts and let them do it, not me.

Question 6. It's interesting to read your questionnaires, because you think manager has to educate employees. I think manager is just a person that can lead people, it doesn't necessary to say he is better than his employees. In my world, I choose the people who are better than me in their own fields. Company is not military, company needs talented people, not soldiers to follow the bosses, that kind of company won't go further. Anyway, I need to answer your question as well. Setting up priorities, and rank them in different level and timing. Utilize people according to their abilities and achieve the goal.

Question 7. I will ask them why? What's the reason behind why they reject me? If they say I don't fit into their corporate culture, then I will look something new. If they say I lack of some ability, I will try to learn and apply again. Really depends on the reason why they reject me.

Question 8. When something goes wrong, I always look first, what's really wrong, and which process, never who to blame. Because everybody tends to make mistakes, that's normal and what made us human. I am a problem solving person, so solving the problem is my goal, and try to makeup the losses. Blaming others that what losers do.

Question 9. I will consult with the people who have more experience on this special task, try to get some insight and also learn what I need to learn. I am curious person, so everything new for me is learning process and fun. Somehow it's translated into workaholic. So free time is not really free, but I enjoy it.

Question 10. I will first talk with the current team about my new plan, and try to get some feedback plus convince them. You know when you are on a project, till the end probably changed 20 times already, so as long as it's not the final version, I am always changing and adapting, so my team is used to it. Haha! Sounds like nightmare ha !