“STATUS” OF THE ENTREPRENEUR AS QUALITY SIGNAL IN EARLY-STAGE VENTURE CAPITAL INVESTMENT DECISION MAKING, AND THE EFFECT OF NETWORK FACILITATORS.
Statement of originality

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Abstract

The focus of this research is to investigate the status of the entrepreneur as a valid quality signal in early-stage venture capital investment rounds. Furthermore, a second variable, network facilitators are introduced in order to reveal potential interaction effect of the variables on early-stage venture capital investment decision making. The research is relying on a vignette experiment, where venture capital investors were asked to make an investment decision, based on the available information the vignettes provide. Venture capitalists were selected in advance with great care. The sample consists only European and some US venture capitalists with relevant experience in the high-technology sector. After the initial cleaning of the data, 127 responses remained to execute the quantitative analysis. The analysis revealed that status is recognized as a valid quality signal which increases the probability that the new venture receives an external fund from venture capital firms. The study also shows a relation between network facilitators and the early-stage capital investment decision, as well as interaction with the status signal.

*Keywords: Quality signaling, Venture capital investment decision making, Status signal, Network facilitators, Early-stage investment rounds*
1. Introduction

In a situation where is a high uncertainty and where information is especially scarce, quality signals are essential to assess new nascent ventures (Meyer, 1979; Spence 1973).

New ventures are often looking for external sources to acquire the necessary capital for growth. The high-technology industry I am going to examine is huge and going to grow, given by its competitive nature. From the theoretical perspective, this study can contribute to previous publications on quality signaling and VC investment decision making. New ventures can signal their quality through several characteristics. Such venture attributes can be the management team, management heterogeneity, executed patents, prototypes or market presence (Higgins & Gulati, 2006; Lee et al., 2000; Westphal & Zajac, 1998, Audretsch, 2012). Many of the academic literature deal with these types of attributes relatively often and assess the mentioned characteristics in the later stages, later rounds of investment periods or even IPOs. Early stage financing, on the other hand, can be crucial for several innovative new ventures, and the grand challenge in this thesis work is relying here. It is hard to get Venture Capital investments in early rounds, and sometimes it is just simply unavailable (Hellman and Thiele, 2014), but most frequently the environmental uncertainty and information asymmetry serve as a problem (Hsu, 2004, Audretsch, 2012). New, developing businesses are usually not generating revenues, and limited information is available for investors to observe the reliability and quality of the firm.

To reduce this information asymmetry, quality signaling and the proper assessment of that signals is one way to do so (Pence, 1973). Thereby, I would like to introduce the signaling perspective of the entrepreneur’s “Status”, as quality signal regarding getting access to Venture Capital funds in startup and first-stage capital investment rounds. Furthermore, I would like to introduce and examine different Network facilitators as the second independent variable, which could even further increase the probability of getting access to external capital, if it interacts
with status. From managerial perspective, it is an important area to study. I am expecting, that status could be valid signal which can endorse the quality of the new venture. However, those signals could remain unnoticed in early-stage financing decision making. Moreover “status” is an immensely hard variable to define, and investors might not aware of the quality signal in this specific form. During the literature review phase, I am also going to explain how reputation might interrelate with status. Affiliations are also involved in this study, to serve as a baseline for the second independent variable. Plummer, Alisson and Connelly (2016) studied third-party signaling to endorse the quality of certain startup companies. These organisations or University incubators are going to serve as network facilitators. These companies are representing high-status professionals and may amplify the examined entrepreneurial signal to external investors. I believe third-party affiliations (Network facilitators) could make such signals noticeable and allow to reduce the information asymmetry, resolve signal ambiguity and make such quality signals relevant for the investors if it is not recognized in advance.

**Research question and research goal:**

The core of this research is to contribute to the quality signaling and venture capital decision making literature by analysing a possible effect of status signal on Venture capital early-stage investment decision. Furthermore, the study examines, how a venture development organisation might interact with the above mentioned “status” and affect the investment decision.

**Research questions:** Can status serve as quality signal in early-stage venture capital investment round? Are third-party affiliations able to amplify such signal?
2. Literature review

To shed light on the academic work that has addressed to the topics of venture capital investment decision making, quality signals which involves the entrepreneur’s status, reputation, status-reputation interrelation and lastly network facilitators. This chapter consists of the relevant literature according to these fields.

Investing young technology-based ventures is a high risk undertaken by different investment funds, Banks, Business Angels, and Venture Capitals. With new prototypes, still in the development phase and with lacks of financial information, start-up companies, especially in the high technology industry, still face a steep commercial failure rate (Aldrich and Fiol, 1994; Tushman and Rosenkopf, 1992). This can be traced back and connected with other core problems with early-stage capital investments, which is, the difficulty of evaluating them because of the high environmental uncertainty and lack of track record or even revenues (Penrose, 1959; Shane and Stuart, 2002). In the next phase, I will investigate VC decision makings on a wide scale, paying special attention to different strategies or factors used by them in early-stage financing periods.

2.1 Venture capital decision making

External financing of startups has always been a great academic topic to examine with both theoretical and practical challenges. It’s been an important source of funding for new nascent enterprises to grow and to get the necessary capital that the entrepreneur’s funding could not cover.

Since VCs are facing high uncertainty and limited information or in other terms information asymmetry especially in early-stages of finance, they rely highly on the observable characteristics or quality signals. In other words, they try to draw a conclusion about those
attributes of the firm, available for them at the time. Though many articles and publications are focusing on evaluating business plans, firm characteristics and identifying different criteria in firm evaluation (MacMillen et al., 1985, 1987; Gartner, Starr, Bhat, 1998; Shepard, 1999). Only a smaller fraction of articles has been written about the importance of entrepreneurial characteristics, such as status and reputation within the venture capital decision making process.

It's known that Venture Capitalist are savvy professionals but given the significant rate of failing new startups, there is still room for improvement in VC screening processes in order to reduce risks. John Hall and Charles W. Hofer (1993) contributed to the previously mentioned studies in many different points. Firstly, they found that previous studies were more focused on a different set of criteria only, with no respect of various stages or phases of the decision-making procedure. Secondly, by studying especially VCs evaluation processes in early-stage of investment periods, in which this thesis is also going to contribute, they could create a more multistage and multi-person based set of criteria to make the decision. They found that in contrast to the previously mentioned articles by Wells (1974), MacMillan et al. (1985, 1987) on proposal screening, decision makings criteria like strategy of the proposing new venture, different financial factors, and entrepreneurial characteristics are not used in the assessment of the firms. However, they have found that while entrepreneurial characteristics are relatively unimportant in proposal screening protocols as well as in the overall financial decision, there were exceptions. When the investors assessed a poorly built business plan, they assumed might not consciously the competence of the entrepreneur for building a profitable firm. This suggest that entrepreneurial attributes like entrepreneurial status could be important and measurable for venture capitalists. Secondly, the proposed strategy was rejected in the screening stage, one possible reason for this is a highly uncertain and noisy environment which results a limited amount of suitable information (J. Hall and C. W. Hofer, 1993). While, on the other hand, it
seemed to have a significant role later in the evaluating stage where venture capitalists have more time to examine the proposed strategy along with the review and assessment of different financial information. Therefore, it can be assumed that other entrepreneurial characteristics like the status of the entrepreneur have greater signaling value in the early-stage and getting more attention from investors despite the fact that they are not fully aware of it.

Thirdly, the article shed light on the role of financial information in business evaluation process. Empirical evidence showed financial information in the proposed ventured did appear to be a minor criterion (J. Hall and C. W. Hofer, 1993). The possible explanation for this, that it can be a same as it was with the proposed business strategy. Venture capitalists usually execute an in-depth analysis of financial data later in the assessment stage (J. Hall and C. W. Hofer, 1993). Last but not least, one of the most important information, which could contribute to the thesis work is the founding on the criteria related to the entrepreneurial characteristics. While the statistics observed that the characteristic of the entrepreneur is not major criteria in Venture Capitals decision making there were another exception, which require a greater attention. Hall and Hofer (1993) highlighted that the extremes in entrepreneurial competence are recognized and valued highly in the decision-making process. More specifically, the article proved that different entrepreneurs and founding teams, who have already launched startups successfully in the past, enjoyed greater attention from external investors. The other extremes as it was mentioned before the visible, lack of competence. All in all, the paper supports the thesis on examining more entrepreneurial characteristics in early-stages of investment rounds. By following the academic works on the topic, bearing the importance of such characteristics, formal professors of the University of Amsterdam Tsvis Vinig and Maarten De Haan (2005) also investigated the screening process and the importance of entrepreneurial characteristics in VC decision making. More precisely different criteria in the screening phase between the US and the Dutch venture capitals. This scenario is highly significant in this case because the
empirical investigation shows that US and Dutch VCs have similarities in ranking the top criteria of the screening process. They both listed the entrepreneur as their core aspect in the screening phase. US investors ranked the others, such as Product, Market and Financial data on the same level. On the other hand, Dutch VCs ranked Product and Market as their second most important attribute and put Financials as their least important category (Vinig and De Haan, 2005).

Findings in the same paper suggest that the process which investors diced how to screen the firms depend on active- and passive deal flow approach. In which, the passive deal flow approach suggests, that Venture capitalists are relying on different social events within the industry, and lure through advertising and network events to receive business plans and by that opportunities. This approach is used by incubators in the technological sector. The other method is the active deal flow which states that the new nascent venture is looking for investment opportunities through their network. These findings are important from signaling perspective as well as backing up the theory that incubators or other third-party affiliation might boost the signaling values of entrepreneurial status.

Other authors like Hsu (2007) also showed empirical evidence that Venture Capitalists decision making is inflicted by the characteristics of the entrepreneur is a major part of the evaluation process. This could be educational background or success of previous startups, different experiences. The study is especially important among the literatures in several dimensions. It both shed light on startup valuation by VCs and shows empirical evidence on the positive relationship between higher venture’ valuations and social capital as well as prior entrepreneurial experience. Hsu (2007) surveyed 149 technology-based early startups on how external sourcing of VC funds reflects firm’s quality. The study can contribute to the hypothesis development in several ways. First Hsu (2007) proves, that indeed prior experience of the entrepreneur (especially one who delivered a financial success as well) can increase the
likelihood that the firm receives external VC financing. It contributes also to a previous study by Burton’s et al. (2001), which states that Venture Capitalists prefer entrepreneurs with prior career experience and expecting higher competence from them to create value for the firm. Those are suggesting that VCs in early stages are more likely to alienating risks in one major way, in which they back entrepreneurs whose ‘done it before’. A clearer signaling effect can in early phase financing can be now suggested based on the literature review.

Since prior experience is the core of reputation the findings can back up the hypotheses development on status. Later in this section, status and reputation interrelation will be discussed. This argument has been defined already in prior papers. Hsu (2007) investigated how human capital can affect the development of the social capital. It is a complementary effect what Caleman (1988) examined and not only suggesting another signaling value for external capital providers like VCs or PE firms, but can also contribute to a interrelation model between status and reputation. For instance, professional experience (as human capital) could not only mean that the entrepreneur or founding staff know how to do business but also can contribute to who they know (building social capital). This suggests, that if we involve the study of “status signal” by Podolny (1993), in which he argues that status is defined by the actor’s social capital, we can assume that prior experience indeed can build status.

To conclude this specific section, it is clear that VCs in early stages of funding paying significant attention to the heterogeneity among entrepreneurs. Getting back on the track, on how outside investors, and more specifically VCs are screening firms. Baum and Silverman (2004) approached the question, based on prior signaling literature (eg.: Spence, 1974) as well as VC investment decision making (eg.: Shepard et al., 1999) together. Based on their investigations, Baum and Silverman (2004) identified three broad segments in the valuation of new nascent ventures. In order, alliance capital, intellectual capital and last but not least, the already mentioned human capital, as equally important parts. Firstly, they referred alliance
capital as a relatively important aspect in early years. Alliances can provide multiple advantages including accessibility to knowledge (Baum and Silverman, 2004). These advantages are particularly beneficial when information asymmetry is high. Other scholars also studied alliances. Investors are highly relying on more indirect indicators like alliances (and the quality of them), to assess the ventures (Stuart et al., 1999). This article also shows empirical evidence that firms in the biotechnology industry with outstanding partnerships are getting greater attention and higher valuation at IPO stage (Stuart et al., 1999). The same effect could be expected in earlier phase, because the alliances may amplify other signals, provide a standalone third-party signal or both. These external endorsements are suggesting that professional actors, such as university incubators assessed the firm positively before, and validated its quality.

Besides alliance capital, there is intellectual capital. The thesis work is not typically focusing this part of the assessment; however, many scholars (eg.: Audretsch, 2012; Hsu and Ziedonis, 2013) have paid a significant attention on intellectual property, patents and its signaling value and it is important to mention in the topic of venture capitalists’ decision making. Renowned scholar, Audretsch (2012) have investigated the importance of patents application and prototyping as quality signals. Most of the new innovative ventures try to deploy or adopt a protective barriers or mechanisms, which ensures their competitive advantages. From legal as well as financial perspective, patents can serve as quality signals (Long, 2002; Conti et al., 2013; Audretsch, 2012). Granted patents have more substantial effect than pending patents, but only for young startups and during early financing rounds (Greenber, 2013). A positive correlation has been found between patent stocks and the amount received from VCs and higher IPO pricing (Hsu and Ziedonis, 2013). Other studies also focused this research area, especially patents as signalling variables. Pre-VC patent filings are correlated with larger VC fundings and lower the failure rates. Furthermore, it increases the likelihood of
a possible investments (Conti et al. 2013). Thus, intellectual capital is critical among the signals, beside human and alliance capital. It is necessary to keep in mind they joint-effect to obtaining VC financing. Since in this research, an experiment had been executed, a joint signaling effect had a special attention.

The third aspect is human capital (Baum and Silverman, 2004). Their empirical investigation resulted evidence that top management teams and leaders with greater responsibilities, and lastly, leaders who are also presidents in other biotechnology firms get more VC financing (Baum and Silverman, 2004). Thus, entrepreneurial activities are vital to acquire external sources, the article, however, states some weak effects and leaves room for further investigation. The number of roles the president takes is positively related to VC financing, yet the represented coefficient is insignificant (Baum and Silverman, 2004). This can be traced back to one of the standard practice of VCs, in which they apply their own management practices to the startup. On the other hand, the study shows, for example, that entrepreneurs with prior failures are also less likely to obtain financial resources from VCs (Baum and Silverman, 2004). Other scholars find similar evidence on how prior career experience of the founding team or manager can positively foster this effect (Burton et al., 2001; Gulati and Higgs, 2003; Hoenig et al., 2014). In Sum, the literatures suggest that VCs are both savvy investors in identifying potential in the firms or in other words picking the right startups but also taking a “couching” role as one of the article refers to it, via their management expertise they provide (Baum and Silverman, 2004). We could assume they might have more or less interest in experiences under certain conditions in startups or in earlier rounds of funding.

Examining the quality signals in early-stages of financing can be crucial and beneficial for both entrepreneurs as well as for investors, but it involves highly uncertain factors and high risks as it was discussed before. Positive association of patent applications and alliances with
firm valuation was found, and both, indeed could lower this risk in investments. Many other articles can be found on the topic of venture capital decision making. Venture capitalists are structuring their deal in really high respect with the classic economic notion of risk and reward. They consider several aspects, such as Strategy, Finance and the Entrepreneur itself in the assessment of the venture. The articles in the review are highly, empirically corroborate with this statement. The mentioned signals could boost the probability of getting the necessary resources to survive and grow, but what other signals can be taken into consideration?

The articles are lacking with the hardly measurable variables like “Status” and “Reputation” in early-stage VC financing.

The next part is going to introduce the literature on quality signals as a base to move on, specifically to Status and Reputation, and they interactional effect.

2.2 Quality signals and hypothesis development

Investing in a startup or first stage ventures is an immense risk undertaken by Venture Capitals, but quality signals could reduce this risk. We discussed the high commercial failure rate before, and the environmental challenges the entrepreneur faces in this specific period. Penrose (1959) and also Shane and Stuart (2002) scrutinized the evaluation challenge and concluded that difficulty for Venture Capitalist to evaluate firms, originating from the lack of performance track record. Stinchcombe (1965) refers to it as a liability of newness. However, this information asymmetry can overcome or reducible by several ways as in our case by examining different quality signals. As a contribution, (Stuart et al.,1990) VCs are using and relying on every possible source of information and taking in account all the observable information that can be gathered about the new venture. VCs spend a substantial amount of
time and effort on seeking and assessing these entrepreneurial characteristics and signals to estimate the quality and potential of the young firms (Amit et al., 1990; Hall and Hofer, 1993).

Hereafter, I would like to describe and give a brief overview of quality signals. The importance of signals has been long time recognized by many scholars. They are especially important under the effect of information asymmetry (Meyer, 1979; Spence, 1973). Spence (1973) in his publication identified signals as such activities or traits of the actors (on purpose or accidentally created) which helps others to receive valuable information. For instance, a price tag or warranty on a certain product might help the customer to assess the product quality. According to Spence (1973), signals should also be observable in order to be efficient. Visibility is a key factor of signaling, since when outside investors are not able to recognise the signal they might lose an opportunity. Spence (2002) beside Janney and Fiolta (2003) found that, however, signals are usually sent intentionally, both entrepreneurs and investors are able to send signals without aware about it. Importantly in our case, the importance of status might not be fully recognised by both sides. The key aspect, on the other hand, is visibility. Is status of the entrepreneur holding a value in itself or with third party endorsements a far more superior signal can be created? Scholars are particularly payed attention on different affiliation and their signaling role. Given the relatively scarce information a new venture can provide, different form of affiliations with newly created firms can enhance the market value (Podolny, 1994; Gulati and Higgins, 2003, 2006; Pollock and Gulati, 2007; Pollock et al., 2010). Third-party signaling will be discussed more precisely later on. Other signals like patents and research alliances have been argued to serve as highly valuable endorsers of the venture’s technology (Audretsch et al., 2012; Cao and Hsu, 2011; Conti et al., 2013; Häussler et al., 2012; Hoenen et al., 2014; Hsu and Ziedonis, 2013; Long, 2002). Baum and Silverman (2004) compared different startups from a specific industry with and without patent application and patent grants, the outcome was also clear that those startups with protection could acquire more external
capital that those without it. Other empirical examination on information technology startups from an incubator revealed that there is also a positive relationship between the number of patent filed and the amount of capital, the new venture received (Conti et al., 2013). All these articles and findings demonstrate that patents are indispensable in many cases, functioning in two ways, to deliver competitive advantages and to protect intellectual property. New ventures can also signal their value through the characteristic of their management team, their actions, such as market presence (Higgins and Gulati, 2006). These finding are more relevant to the thesis work. Others have found that prestigious executives and directors can be beneficial endorsers (Pollock et al., 2010). Other signal like team experience was mentioned as signal in this regard as a high-quality technology is more likely to attract investors and increase the probability of successful funding. Some of the scholars have argued that this form of quality signal is one of the core evaluating criteria to venture capitalists (Franke et al., 2008). This trait can be identified by management related experiences, leadership experience (Franke et al., 2008), or as in terms of this research project the experience of successfully launched prior startups (Gompers et al., 2010). Since the thesis work is focusing on early phases of financing, this attribute is going to be one of the most important aspect supporting the dependent variable, the entrepreneur’s “Status”, supported by status-reputation interrelation.

Many examples and types of signals were discussed and mentioned in the first phase of the literature review. Before the more specific introduction of the independent variables and before the hypothesis development, signaling interactions should be discussed.

While quality signals are highly valuable endorsements for VCs to obtain information, it is crucial to keep in mind their interactional effect as well. This is highly relevant in case of status signal. In this research, status is going to be investigated in a complex manner, which involves the entrepreneur’s network and expertize as well. Other simultaneous signals, like third-party affiliations could also fit and work together perfectly with other signals (Plummer,
Allison, and Connelly, 2015), furthermore, it might activate such signal, which is possible to remain unnoticed (Plummer, Allison, and Connelly, 2015). Spence (1973) described signaling theory, but how investors are making sense and assess information those signals? Literature by Weick (1995) explains this “sensemaking” phenomenon. The article clarifies how actors are processed the data available and act upon with respect to the obtained knowledge. Still, VCs are facing enormous challenges in navigating through ambiguity. Third party affiliations might help to rise above the noisy environment and examine the relevant signals.

Lastly, scholars have identified two major categories of quality signals. One group is signed to the characteristic of the signaler and the other is referred as activity of the signaler (Higgins and Gulati, 2006; Pollock and Gulati, 2007). Signaller characteristic all the hardly observable resources the new firm has. These symptoms that VCs are looking for in a quality venture is the firm’s human and social capital (Beckman, Burton, O’reilly, 2007). This group are going to enjoy greater attention in this work. Signaler’s actions, on the other hand, should be mention as well. These actions are costly, but reliable tools to signal quality. Introduction of a product, or prototyping, different patent applications can demonstrate the firm’s value (Hsu and Ziedonis 2013).

Status and reputation are represented as entrepreneurial characteristic in the next phase, therefore, I would like to give a broad overview of both the stated signals, their interrelation effect in order to build a properly define experiment around the status signal.

2.2.1 Status signal

Status has been long time recognized as indicator of hierarchical position and prestige that helps individuals and businesses procure the necessary resources and grants access to opportunities (Podolny 2001, Sauder et al. 2012). The basic concept around status is, that it
represents a hierarchical position between actors (Berger et al. 1972, Webster and Hysom 1998, Ridgeway and Correll 2006). It can be associated with genders and races or represents different social and economic benefits as well, such as wage differentials or rankings (Podolny 1993, Benjamin and Podolny 1999, Stuart et al. 1999). Other authors also referred status as the determination of social ranks (Stern et al., 2013). But as we dive deeper in the literature, it reveals the complexity of the phenomenon and how different actors are combining high status with competence.

One important scientific study of Merton’s (1968) theory of the Matthew effect could contribute to the thesis work. This result infers that a person could bias by selecting high-status members with no respect to high quality at the same time and this bias could be applied vice-versa with low-status actors as well. It indicates the need of further investigations on status to reduce potential miss-selection of quality entrepreneurs. This requires the examination of the success rate or profitability of startups, selected with a prioritized status attribute. Since the research not focusing on this area, it is an interesting finding and could be a possible area to further develop this work.

According to (Kim and King, 2014), this bias leads the high-status actors to be rewarded even more, even when their overall performance is inappropriate. Their study also serves empirical evidence in two distinct ways to bias. Firstly, it suggests that high-status actors are more likely to be recognized for what they already do well (and evaluators expect them to perform well in similar tasks). This could be an important finding to test on new nascent ventures as well and suggest that investors do recognizing status as a signal. While other papers have empirical evidence that status can serve as a quality signal (Benjamin and Podolny, 1999) and have a significant effect on innovation and business performance as well (Podolnyi and Stuart, 1995). It was not tested in depths in earlier stages of financial rounds where information asymmetry represents a greater challenge, and where a third-party endorser might also
presented. To achieve this higher performance, authors were focusing on the positive end of status extremes. High-status players are allowed more flexibility in their performance and have greater responsibilities (Kim and King, 2014).

The flexibility in startup terms might lead to higher business performance but high-status also should increase the magnitude of bias. Which means that high status can also lead to failure. Based on the literature contributed to these fields, the novelty value of the thesis work is, to test whether status, is recognized as a reliable quality signal or not, in VC’s investment decision making, in a risky investment stage. I have shed light on the status bias, but what is status specifically and how can it be determined? This part is especially important in order to develop a valid and reliable vignette experiment. It is essential to sufficiently define and manipulate those vignettes. According to Podolny (1993) Status is in a relation with the actor’s network. The greater that network is, with reputable members, the higher the actor’s status. Other studies also support this assumption (Burton et al., 2001) but with third party affiliations and high-status institution, and between the confidents and investment funds they receive from investors. Here we can link the previously discusses “social capital” by Hsu (2007). In which, Hsu (2007) shows that heterogeneity of entrepreneurs is significant in early-stage investment and the different social networks are highly valuable. High-status members are also more likely to succeed than others with lower status, suggesting less networking capabilities and less competence (Berger et al., 1972). Other novel work in the biotechnology industry showed, that during an IPO stage investment round, a different affiliation that managers have with pharmaceuticals represent a high-status and increases value of funding (Higgins and Gulati, 2006).

Benjamin and Podolny (1999) explored the Californian wine industry in the context of status. They found empirical evidence, that status works as a quality signal, in the wine industry. Individuals were willing to pay a premium for specific wines from high status
wineries. Furthermore, wineries that have an affiliation with a certain geographic region, even more, increased the price (Benjamin and Podolny, 1999). It is a distinct industry, however, they argue that these dynamics might be applicable to other industries as well. We can assume a similar effect in the high-technology industry with engineers and their specific knowledge for instance. Other novel work of Podolny (2001) on a network as working both ‘pipes; and ‘prisms’ of the market can used in the research. In one way, networks grant access for information and resources and the second is, as it referred to ‘prisms’, in which the quality is understood by potential partners through those networks (Podolny, 2001). Empirical finding shows that specific network with multiple structural holes the new venture receives a greater capital in early stages (Podolny, 2001). The structural holes are basically a working bridge between two groups, and Podolny (2001) also argues that the more structural holes are in the firm’s network the more opportunities and benefits are, what the market provide, because there are more and wider scale of information available. Lastly, (Stern et al., 2014) measure states based on the doctoral degree a renowned university granted. This also gives an opportunity in the research, to add more factor which defines status in the experiment.

Based on the above mentioned theoretical contributions, which received strong empirical support and the positive relations between Status and VC investment decision making. I would like to entitle the first hypothesis, which is:

\[ H1: \text{High-status of the entrepreneur(s) will increase the probability a new venture receives an external fund from VCs in early-stage investment periods.} \]

In the next section, reputation will be discussed in order to give a basis for discussing the status and reputation interrelation effect. Furthermore, it eliminates possible confusion between status and reputation. Important that the two should not be mixed up, and they both advocate an independent signal (Kiesler, 1975).
2.2.2 Reputation signal

In academic papers, reputation was defined as a representation of the company’s or entrepreneur’s past actions and future expectations that describes how attractive the firm compared to other leading rivals (Stern et al., 2014). According to this statement, which (Podolny and Phillips, 1996) also contributed, suggests that the company reputation is determined by the quality of the firm’s previous behaviours and actions. Other renowned studies in the past suggest that companies without any track records or actions can also be determined by the reputation of the founder (Cohen and Dean, 2005). This foundings suggest that early-stage startups can also use the reputation of the founder as a signal to attract investors. For instance, previous studies in the biotech sector showed that there was a quantifiable positive relationship between the top scientist (identified by publications) and higher valuation (Stern et al., 2014). The same paper also shows a positive relationship between the amount of capital raised through an IPO and the number of citation of the scientist’ work. Yet, this novel work from (Stern et al., 2014) also refers to reputation as a signal determined by the value or quality of an actors’ previous appeal and states that reputation cannot be mixed up status. Thus, reputation may affect the company’s perceived quality alone, independently form status (Kiesler, 1975). An important conclusion can be drowned from the studies. In knowledge-intensive industries like biotechnology, scientific reputation is affecting investors decision on higher a scale. Moreover, they found to be reliable signals. The measurement of reputation, however, is slightly different among the publications. Stern and colleges (2014) used two specific proxies in order to measure reputation signals in the biotech industry: publication counts and citation rates in the scientist academic work. It is an exceptional, favourable measurement variable but what can be used in other industries. Scholars have defined reputation as prior actions (Stern et al., 2014), some bond reputation with the founder’s
experience (Podolny and Philips, 1996). Thus, we can suggest that reputation aligns with the founders or leading team’s experience and as an assumption, we can take a broader look on managerial and entrepreneurial experiences among the literature.

Managerial or team experience in new venture evaluation is coming up more frequently in academic works. Startup teams are consistently mentioned as one of the major criteria in VC evaluation and described as a resource, which significantly increase the probability the new venture receives an investment (Franke et al., 2008; Hsu, 2007). Stuart and Abetti (1990) examined managerial experience with respect to venture performance. They have found that prior managerial experience of the entrepreneur has a positive effect on the business performance, however, the variable in the study does not reflected as an independent outcome. Managerial experience is correlated with entrepreneurial experience, created a joint effect on the venture’s performance (Stuart and Abetti, 1990). The study particularly focuses on the leader’s experiences in contrast to many other scholarly works on team experiences. Basically, leadership and prior venture experiences found to be relevant (Franke et al., 2008; Gompers et al., 2010), yet other scholars like (Hsu, 2007; Hoenig et al., 2014) prioritizes team experience to deliver both productive and signaling value.

Thus, signaling value of reputation of the entrepreneur in that sense has received little attention in academic works. Managerial experience of the founder found to be significant when there is also a third-party affiliation with additional endorsements (Plummer, Allison and Connelly, 2015). A standalone signal had only a little deductible effect on the probability of getting external capital (Plummer, Allison, Connelly, 2015). This suggests that entrepreneurial prior experience became valuable [from perspective of ‘sensemaking’ (Weick, 1995)] when there is a reputable alliance (Plummer, Allison and Connelly, 2015). Based on the past studies, on founder(s) reputation and previous actions of the entrepreneur, we can assume that reputation, especially higher levels of reputation of the entrepreneur correlates positively with
the probability of acquiring early-stage VC investment. If we consider that highly reputable actor’s status is also valued high, which the next section is going to describe, it assumes that status signal in its complexity is a reliable and good signal for investors to pick high quality startups.

2.2.3 Status and Reputation interrelation

We discussed the individual effect of both status and reputation previously. Other theoretical arguments suggested, however, that status and reputation can influence each other’s signal and create a multiplicative impact (Stern et al., 2014). Scholars have shown empirical evidence not only on the differentiation on status and reputation signals but assured a joint effect on alliance formation (Stern et al., 2014). This specific study is essential in two ways, according to this thesis work. First, it eliminates the confusion that has arisen if we consider status and reputation as stand-alone signals. Second, they are also analysing how this two, entrepreneurial characteristic could affect each other and increase the probability of an early joint venture formation (Stern et al., 2014). The research on reputation-status congruence showed that when both of the variables are low, they have more powerful amplificatory effect when the other extreme is stand (Stern et al., 2014). The article found to be relatively important because this empirical investigation also suggests, that there is an interrelation effect as well between the two variables. Further research on this relationship is focused in other academic studies as well. The article by Hsu (2007) shed lights on the interrelation between status and reputation, since experienced founding teams or experienced founders might tempt and create more efficient and greater networks proving the existence of the relationship between status and reputation. Hsu (2007) argues that networks are not only capable of delivering superior performance by building connections with VCs (Shane and Stuart, 2002), but also allow the new firm to acquire talent more efficiently and by doing so building a human capital as well.
This conjecture is also supported by an earlier study by Coleman (1988). Coleman (1988) examined social capital in the context under specific structural condition as he analysed social capital in the family and social community effect on high school dropouts. The study showed evidence that there is a highly noticeable social effect that reduces the chance of dropping out of school, and by that, creating human capital (building knowledge and experience) in the long term. It is a specific area and the example of how social capital effect human capital, however, it might be applicable in the high-technology industry as well. The opposite relation can also stand as Hsu (2007) referred to it: “human capital can not only contribute to what you know (prior experience) but also who you know”.

On the one hand, there is still lack of knowledge on this vis-a-vis relation effect of status and reputation. But, on the other hand, we can assume that the relation stands, and since VCs are putting a huge amount of effort in the assessment, involving the assessment of different entrepreneurial attributes, the entrepreneur’s experience can be a core part of entrepreneur’s status.

2.3 Network Facilitators and Visibility

Network facilitators, different alliances can be crucial during the early years of a new firm. This section is going to examine the benefit these third-party affiliations can provide in terms of signaling. The new ventures, as discussed, are usually lacking in knowledge, necessary resources to make a substantial impact on the market (Silverman and Baum, 2002), but with strategic alliances and other alliances they can seize the opportunities, and deal with constraints they face (Gulati and Higgins, 2003). Baum and Silverman (2004) concluded form VC transactional data, in which, the more affiliation the startup have, the greater the VC financing it receives. This, of course, shows evidence on how the number of affiliations can affect external financing. On the other hand, this study examines just one reputable alliance which is
represents high-status and network. University incubators, for instance, represents an upstream alliance and could provide both knowledge and networking capabilities (Hoenig et al., 2014). Baum and Oliver (1991) also state that third-party alliances may also serve as approval for startup legitimacy. This function assumes a sort of visibility factor for small firms who are in search of external sources. This feature is also has been supported by the article of Stuart’s (2000). These partners are usually reputable organizations and investors can expect that startups within this kind of partnership, that they are already compiled for certain expectations.

The signaling value of these organizations, institutions or individuals received devoted attention from scholars. How can they increase the valuation during an IPO (Gulati and Higgins, 2003; Pollock et al., 2010) or reduce the high environmental noisiness at early stages (Stuart et al., 1999). Connections with the status of the entrepreneur, third party signals have been noted by other authors in field. The value of having an affiliate with high-status has been long recognized by (Camic, 1992), the study examined “status” in the field of science and proved that scientists is more likely to receive favourable evaluations for their works if they team up with other high-status members. From this we can assume that this interaction effect is relevant in early-stage capital investment periods. The academic works, however, are still lacking how status might work independently, and with third party endorsers in early-stages of financing. Are they going to have a combined effect which strengths the probability of receiving capital or one is one is recognized more over the other?

High status can be represented by different entities, such as Venture Development Organisations (VDO) or university incubator, or different mentoring programs in which affiliations can support, and evaluate concepts of newly born ventures (Renault, 2012). Therefore, these organisations can be essential and important sources to increase the signaling effect of the new firm. (Lee et al., 2011) examined the signaling effect of third party affiliations in the context of early-stage financing. The academic paper of (Lee et al., 2011) addressed two
ways that these affiliations can contribute to increase the signaling effect. On the one hand, they can fund the start-up itself and provide necessary resources. On the other hand, they can communicate to potential investors and provide vital information on the quality of the new firm (Lee et al., 2011). VCs and another type of investors handle that information as reliable source of assessing the target firm. Other academic paper showed as well, that affiliations as moderating variable in the context of quality signalling are valuable. (Plummer, Alisson, and Connelly, 2016). In their paper argue that third party VDOs indeed can boost the chance of acquiring external capital in the IPO stage. They used other signal variables (Managerial experience, product Introduction, and Commercial Property) to show how signalling interaction can deliver benefits to secure investments.

From reputation perspective, VDOs are an excellent endorsement of the new ventures quality, because they highly reputable firms with great expertize in the industry in which they compete. VCs, as well as other savvy investors, are value affiliations as beneficial third parties, which can pick and assess potential, quality start-ups. Other examples could be: guidance for entrepreneurs (Ucbasaran, Lockett, Wright & Westhead, 2003), could provide access for high status partners, networks, could work as a brokering partner (Pollock et al., 2004), could provide logistics and expertise in different fields (Renault, 2012). All in all, these affiliations could provide various benefits, such as networking capabilities or expertize for new ventures, and I am expecting that certain affiliations could unlock such signals as status make them visible in order to acquire external capital or even more strengthen the already realized status signal. Affiliation in this case only provide (networking capabilities and expertize), therefore the variable will be called “Network Facilitators”.

The findings in the previous academic works entitle this thesis to assume the following hypothesis:

\[ H2: \text{ Third party endorsers could strengthen Status signals and, thus increasing the probability the new venture receives early-stage VC fund.} \]
2.4 Conceptual framework

The above listed hypotheses are structured and illustrated in the conceptual framework below:

Figure 1 - Conceptual Model
3. Methodology

The following chapter of the study consists the empirical design and research approach. First, the instrument of the research, research procedures and characteristics of the vignette experiment as well as the sample will be explained. Secondly, the measurements and variables are going to be described followed by the statistical methodology part.

3.1 Research Design

The thesis work is conducted under the philosophy of positivism. It aims to contribute to previous studies in topic of Venture Capital Decision Making and Quality Signaling theory. It intends to examine observable and essentially measurable variables. Many authors in the field investigated core attributes like management team, patents applications, prototypes and track records (Arthurs, Busenitz, Hoskisson & Johnson, 2009; Higgins & Gulati, 2006; Westphal & Zajac, 1998, Audrescht, 2012). On the other hand, just a few dealt with the signaling capabilities of the entrepreneur in more noisy and uncertain environments such as early-stage investment rounds. This leave us with a gap for further academic investigation but mostly is suggests the theories can be proposed and approved which predicts reality (Saunders & Lewis, 2012), in this specific topic.

The research technique used in this thesis is a vignette experiment, distributed with an internet based survey. The scenario based experiments are proved to be a reliable but most importantly very effective method to examine decision makings (Wason et al., 2002). The given time frame to finish the master thesis was suitable to conduct a 2x2 factorial vignette, but not a conjoint experiment that was used by referred authors previously (Frake et al., 2006; Hoenig et al., 2014). The vignettes in this research is already manipulated, however, the vignettes still represent a more realistic, and concrete context than a simple survey question and represent high internal validity (Steiner, Atzmuller and Su, 2016).
In order to construct the vignettes, I was both adapting elements from a previous conjoint analysis by Hoenig (2014) and consulted with a venture capitalists to fine-tune and make sure the vignette is understandable and represents a hypothetical startup company. Since, there was no previously validated scale in the literature for manipulation check, I have created statements based on the literature and characteristics of the variables used in that literature and asked respondents to indicate how strongly they agree or disagree with the specific statement. This is an important issue in a vignette experiment. The experiment aims to be as realistic as possible, however, it is necessary to check that in the hypothetical startup the studied variables are well manipulated and the respondents are aware and realise different attributes. Of course, this calls for an immediate validity and reliability check in the procedures before testing the actual hypothesis.

The questionnaire was designed and created in the Qualtrics software provided by the university (Qualtrics, 2017). Based on the conceptual model, the experiment is a 2x2 fractional design with entrepreneurial status and network facilitators. Venture capitalists were assigned randomly between the four groups and were reached by a multi-channel approach. The approach and sampling approach will be broadly discussed later on. In the next phase I would like to introduce the vignettes as presented to the participants.

3.1.1 Vignette experiment design

The early-stage financial rounds are well suited for this type of experiment. The characteristics of the stated startups can reflect reality and are close to a real business proposals in a compressed, simplified version. Venture capital decision making criteria can be narrowed down at this specific stage, because new ventures are usually lacking in financial information but other managerial or entrepreneurial attributes, agreements, patents and other organisational or social capital can be screened and measured.
Hereby I would like to explain and describe the vignettes, presented in the experiment. All of the vignettes are similar in the first section, where the scenario is introduced to the respondents and the background of the companies are stated. In the scenario, respondents are faced with a situation where a new venture is seeking early-stage capital from them and now they have to evaluate the firm and make a decision, based on the available information.

The background information is adopted and redefined based on Hoenig’s (2015) conjoint experiment. The information used, are synthesised below:

- The company operates in the Biotechnological industry
- The venture relying on technological innovation
- There is a working prototype – (applicability for industrial use)
- 100% ownership by the entrepreneur
- the firm states a clear value and potential

In order to prevent, that respondents find the information too artificial, the information about the company and the entrepreneur is integrated into a short text (Appendix 1-5). The background information is followed by the entrepreneurial attributes. At this part to fraction of the factorial designs are presented in a form of short text. The human factor as well as the alliances are highly relevant factors in the VC screening process. These two variables were used here, are described as follows:

*High status entrepreneurs*

- PhD in engineering in biotechnology at a renowned University
- Excellent social capital – with reputable scientists in the field
- Board member of a highly reputable firm
**Low status entrepreneurs**

- Bachelor’s in engineering in biotechnology at a lesser-known University
- Poor social capital – with no reputable scientists in the field
- Not too much experience

The second independent variable (Network Facilitators) is presented as a University incubator or Venture Development Organisation. They role is to provide expertize and networking capabilities to the entrepreneur and by doing so, might unlock status signals and increase the chance for capital investments. The explanation of a VDO is applied into the vignette, because some of the respondents might not familiar with such firms or different countries might not have these types of firms. Network facilitator factors are either present or absent in the life of hypothetical startups.

**Factor is at its high**

- The entrepreneur has a written agreement with a Venture Development Organisation.

**Factor is at its low**

- The entrepreneur operates the company, without the help of any VDO or University Incubator.

After the respondent carefully read the text, and the description section at the end and then carefully assessed the startup, they were asked to make an investment decision and value the startup as an investment decision. In this last block (Appendix8 – Block7) they were also asked to answer several questions which aims to check and validate the manipulations used in the experiment. In the next section, all the variables used in the research will be broadly explained.
3.2 Variables and Measures

The research is investigating Status as quality signal and its supposed effect on the probability of early-stage VC funding. There was no previously validated experiment which aimed status in thin context. Therefore, the variables and measures was applied from different academic works and redesigned to fit with the experiment. The variables are discussed below and as they presented in the scenarios (Appendix 3,4,5,6)

3.2.1 Independent Variables

Status of the entrepreneur are determined by several factors, already discussed in the literature review part. Many of the articles refer status in different ways, therefore, in this research is built up by three factors. Firstly, one factor which define high level status is the hierarchical position (eg.: Podolny 2001; Sauders et al., 2012; Berger et al., 1980; Stuart et al., 1999; Benjamin and Podolny, 1999; Baum and Silverman, 2004) with the combined or attached experience (eg.: Stuart and Abetti, 1990; Hsu, 2007; Franke et al., 2008) the hypothetical entrepreneur has. Secondly, same level of importance was given to networks and social capital. According to Podolny (2005), high status observed by other high-status members from the actor’s network. In the literature review, this finding was link to other academic works which valued networking capabilities as signals capable to endorse competence (eg.: Berger et al., 1972; Hsu, 2007; Burton et al., 2002). Lastly, based on (Stern et. al., 2014) academic investigation, status is measured by university reputation. The study measures the chief scientist status by the status of the school where the actor received the academic degree. The study can be applicable here as well. The experiment was designed in a way that the industrial area, where the hypothetical startup operates, fits perfectly with the prior, combined literature. But still represents the high-technology sector, the research aims.
3.2.2 Dependent Variable

The dependent variable of the conceptual framework is the probability of receiving an external capital from Venture Capital firm. The study states two simple likert-scale question to effectively isolate the hypothetical ventures, in which investors are more interested. Firstly, the recontestes were asked to indicate the likeliness the new venture receives a fund from them. A five point likert-scale question from “extremely likely” to “extremely unlikely” to estimate the individual effect of the four, manipulated vignette (Appendix 8 – Block 7). Furthermore, in order to receive a more precise value on the expected quality (what experts believe, what value the startup hold), a second, 1 – 10 scale was adopted (Appendix 8 – Block 7). This second scale was not used in the analysis later on.

3.2.3 Second Independent Variable

Network facilitators as it was discussed in the literate part, are adopted for their possible interactional role in the experiment. Plummer, Alisson and Connelly (2016) were measured third party signaling with respect of acquiring external capital. Based on the study, we can assume that third party endorsers might amplify quality signals in this scenario as well. These endorsers, or affiliation could provide benefits to new ventures (eg.: Lee et al., 2001; Renault, 2012; Baum and Silverman 2004). Network facilitators are presented in the vignettes as VDOs or university incubators, which are known for their professional expertise and networking capabilities. In the scenarios (Appendix 3,4,5,6), this variable is at its high when the startup has an agreement with a VDO and low when there is no relation with a VDO or Incubator. In order to be ascertain that the managers are understands VDOs, a short description was implemented at the end of the vignettes, providing basic information about the variable (Appendix 3,4,5,6).
3.3 Data collection procedure

In this study, the vignettes aim to represent a high-technology startups, I was filtering venture capital firms in advance, which are more relevant, and dealt with technology based startups before. In order to do that, I was examined Kile and Philip’s (2009) article on sampling high technology firms. In the study, they argue that using the combination of multiple industry classification code, and the right combination of those might result more accurate sampling that relying on just one code. The paper also provided the combinations of SIC, NAICS and GICS code combination to create a more powerful high technology sample with low rate of sampling error. Then, I withdraw data from Standard & Poor’s CapitalIQ and filtered high technology companies, which acquired and received venture capital fund and then I tried to reach the investing VCs with the experiment. To gather as many respondents as possible, I have also used LinkedIn premium feature to e-mail directly, and cold call the relevant manager in person to improve the response rate and motivate them to participate. In order to get a random but balanced distribution, I have created different blocks in Qualtrics (2017) and applied randomization function on the four vignette blocks. That way the experiment was equally but randomly distributed between the respondents.

3.3.1 Sample characteristics

Venture capitalists were reached in multiple channels in order to get a sufficient number of respondents. The overall responses resulted a 138 sample size. In which, only 1 was incomplete and an additional 10 respondents answered “NO” for the first question (Appendix 2 – Block1), this question eliminates irrelevant responses from non-VC participant. This leave us 127 relevant responses with a dropout rate of 8.6%. The nationality dispersion was formed the following way: 39% Hungarian, 28% Dutch, 17% US-American, 9% British, 7% Other EU member. During the data collection period, investment companies was targeted with great care,
we can assume that the sample contains only respondents with experience in the high-technology industry. 68.5% of the respondents were male, 31.5% female with an average age of 34 years.

3.4 Statistical procedure

Before different types of analyses applied to the data, it should be efficiently prepared and cleaned to keep the level of biases at the lowest. Firstly, the data is checked for incomplete answers as well as filtered by the very first question. This question (Appendix 2 – Block I) aims to sort out respondents who may not competent to make an investment decision. It might accurse, when the questioner was opened up by the wrong person or the e-mail simply went to a wrong address. Secondly, the experiment and the manipulation check was not completely implemented from an already used study, reliability check was implemented to ensure the consistency of the variables. To be sure that the analysed fractions of the experiment are properly manipulated a manipulation check was conducted at the end of the survey (Appendix 8 – Block 7). A Cronbach’s Alpha test was first applied to the scale to be sure the experiment is reliable, the entrepreneurial attributes, which the research aims to measure, are correctly manipulated. Afterwards, kurtosis and skewness of the data had to be measured to test normality before the actual testing of the hypotheses. Correlation and a Factorial ANOVA analysis was carried out in SPSS (v.25) to test the stated two hypotheses. The detailed analyses and the result section are elaborated in the “Results” section in the next page.
4. Results

This section represents the core of the research, and aims to test the stated hypotheses. In the first phase the preliminary steps, reliability and normality tests will be discussed, followed by the correlation and factorial ANOVA.

4.1 Preliminary steps, normality and reliability tests

Before any analyses, the dataset was cleaned and 11 responses were deleted from the whole sample. Because of this action, all the four group where respondents were assigned have to be checked in order to make sure the groups are somewhat equal in the number of respondents. Groups are diverse in the following way: 34 in the section where both the attributes were low, 30 where status was at its low but network facilitator was at its high, 32 vice versa and 31 when both of them are high. The sample sizes are approximately equal, therefore we can execute the analyses on the data.

New variables were created in order to test the hypotheses, it is necessary to first test the reliability of the variables and the distribution. Skewness and Kurtosis for the independent variables were calculated and presented in the table below.

Table 1 - Skewness and Kurtosis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Status</td>
<td>0.204</td>
<td>-1.388</td>
</tr>
<tr>
<td>High-Status</td>
<td>0.938</td>
<td>0.521</td>
</tr>
<tr>
<td>Low-Network F.</td>
<td>0.261</td>
<td>-1.294</td>
</tr>
<tr>
<td>High-Network F.</td>
<td>1.011</td>
<td>0.587</td>
</tr>
</tbody>
</table>

For status and network facilitators distribution considered to be normal, when both the attributes at the level of “High”. At high-status skewness and kurtosis are between 0.5 and 1., which indicates that the distribution is a bit more pointy (Chart 1-Appendix). Kurtosis at high level of the variable “Network Facilitators” are also between 0.5 And 1. And Skewness is between 1. And 1.5, which indicates that the distribution was moderately positive and a bit
pointy (Chart 2-Appendix). When both the variables were at “low” level, skewness was between 0 and 0.5 and kurtosis between -1 and -2, which indicates that the distribution a bit more flatter than normal (Chart 3,4-Appendix), however, with large sample it is still acceptable and not going to substantially influence the analyses.

The next step in the procedure is to measure the reliability and validity of the variables. Manipulation check was implemented in the experiment, to ensure that the participants realize the manipulated variables in the vignette or not. Status was measured by 6 variables and Network facilitators by two in the experiment. Cronbach’s alpha of the variables are summarized in the tables below.

Table 2 - Cronbach’s alpha

<table>
<thead>
<tr>
<th>Variables for “Status”</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 “competent” entrepreneur</td>
<td>.828</td>
</tr>
<tr>
<td>Q3 “experienced” entrepreneur</td>
<td>.798</td>
</tr>
<tr>
<td>Q4 “trusted” entrepreneur</td>
<td>.829</td>
</tr>
<tr>
<td>Q5 “quality work” expected</td>
<td>.716</td>
</tr>
<tr>
<td>Q6 “Problem solving”</td>
<td>.765</td>
</tr>
<tr>
<td>Q8 “success” expected</td>
<td>.830</td>
</tr>
</tbody>
</table>

The overall Cronbach’s alpha value for status is .929 for 6 items and separate values are higher than (.70), which indicates that they measure consistency and status is reliable. The overall Cronbach’s alpha for network facilitators is .90 for 2 items. The separate values are presented in the table below.

Table 3 - Cronbach’s alpha

<table>
<thead>
<tr>
<th>Variables for “Network F.”</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 “networking capabilities”</td>
<td>.819</td>
</tr>
<tr>
<td>Q7 “social capital”</td>
<td>.819</td>
</tr>
</tbody>
</table>

Two questions, Q5 and Q6 resulted the lowest level of Cronbach’s alpha, which is still over (.70) and indicates reliability, but indicates that the statements are not fully reflects the status of the entrepreneur. The full statements can be seen in (Appendix 8 – Block 7).
4.2 Correlation

The table below presents the correlation matrix (Table3), it shows all the variables used in the research with the 8 questions, which aims to check manipulations in the vignettes. The correlation coefficients is statistically significant, the dependent variables correlates with the two independent variables [Status (r=-.494; p<0.01); Net.F. (r=-.421 P<0.01)].

Table 4 Correlation matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DV: VC Fund</td>
<td>2.42</td>
<td>1.256</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. IV1: Status</td>
<td>1.50</td>
<td>.502</td>
<td>-.494**</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. IV2: Network F.</td>
<td>1.48</td>
<td>.502</td>
<td>-.421**</td>
<td>.023</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Q1</td>
<td>3.18</td>
<td>1.450</td>
<td>-.608**</td>
<td>.715**</td>
<td>196*</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Q2</td>
<td>3.46</td>
<td>1.490</td>
<td>-.732**</td>
<td>.623**</td>
<td>.443**</td>
<td>.663*</td>
<td>(82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Q3</td>
<td>2.82</td>
<td>1.482</td>
<td>-.556**</td>
<td>.634**</td>
<td>.129</td>
<td>.761**</td>
<td>.621**</td>
<td>(80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Q4</td>
<td>2.87</td>
<td>1.352</td>
<td>-.597**</td>
<td>.659**</td>
<td>.224*</td>
<td>.684**</td>
<td>.665**</td>
<td>.732**</td>
<td>(83)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Q5</td>
<td>3.10</td>
<td>1.278</td>
<td>-.576**</td>
<td>.687**</td>
<td>.232*</td>
<td>.611**</td>
<td>.613**</td>
<td>.550**</td>
<td>.687**</td>
<td>(72)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Q6</td>
<td>3.03</td>
<td>1.154</td>
<td>-.649**</td>
<td>.589**</td>
<td>.097</td>
<td>.746**</td>
<td>.651**</td>
<td>.681**</td>
<td>.658**</td>
<td>.638**</td>
<td>(.77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Q7</td>
<td>3.47</td>
<td>1.511</td>
<td>-.673**</td>
<td>.578**</td>
<td>.515**</td>
<td>.635**</td>
<td>.819**</td>
<td>.559**</td>
<td>.668**</td>
<td>.571**</td>
<td>.528**</td>
<td>(82)</td>
<td></td>
</tr>
<tr>
<td>11. Q8</td>
<td>3.24</td>
<td>1.355</td>
<td>-.620**</td>
<td>.684**</td>
<td>.281**</td>
<td>.757**</td>
<td>.690**</td>
<td>.718**</td>
<td>.801**</td>
<td>.673**</td>
<td>.604**</td>
<td>.753**</td>
<td>(83)</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The correlation model also shows relationships between variables. Correlation is significant between the first independent variable and Q1,2,3,4,5,6,7,8. Beside this, a statistically significant relationship can be found between the second independent variable and Q2,7, which questions aims to measure the manipulation factor of the second independent variable [Net. F. (r_q2=.443 P<0.01; R_q7=.515 P<0.01)].
4.3 Factorial ANOVA

This section consist the test of hypotheses by using a 2x2 factorial ANOVA. The result are presented in the table below (Table 5).

Table 5 - Univariate analysis, Factorial ANOVA

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>85.963a</td>
<td>3</td>
<td>28.654</td>
<td>31.213</td>
<td>.000</td>
</tr>
<tr>
<td>Intercept</td>
<td>722.85</td>
<td>1</td>
<td>722.845</td>
<td>787.380</td>
<td>.000</td>
</tr>
<tr>
<td>Status</td>
<td>45.617</td>
<td>1</td>
<td>45.617</td>
<td>49.690</td>
<td>.000</td>
</tr>
<tr>
<td>NetF.</td>
<td>33.282</td>
<td>1</td>
<td>33.282</td>
<td>36.253</td>
<td>.000</td>
</tr>
<tr>
<td>Status * NetF.</td>
<td>3.915</td>
<td>1</td>
<td>3.915</td>
<td>4.265</td>
<td>.041</td>
</tr>
<tr>
<td>Error</td>
<td>112.92</td>
<td>123</td>
<td>.918</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>941</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 - Univariate analysis, Factorial ANOVA

There was a statistically significant main effect of status on the dependent variable (probability of receiving VC fund), $F(1,123) = 49.690, p<.05$. There is also a main effect of Network facilitators on the venture capitalists’ investment decision making, $F(1,123) = 36.253, p<.05$. Lastly, there was also a statistically significant interaction effect between status and network facilitators on the dependant variable (probability of receiving VC fund), $F(1,123) = 4.265, P<.041$. Based on the factorial ANOVA, all the three null hypothesis were rejected, type 1 error occurred.

The profile plots (Graph5,6-Appendix) shows that high status members, as well as network facilitators (when they are presents) receive capital investments with higher probability (with estimated marginal mean of <1.5). Moreover, the graphs are definitely not parallel and going to intercept at some point in the future, assuming a higher significant level.

Hypothesis 1 ‘High-status of the entrepreneur(s) will increase the probability a new venture receives an external fund from VCs in early-stage investment periods’ had been rejected at $p<.05$. Therefore hypothesis 1 are supported at the level of this research. The second hypothesis ‘Third party endorsers could strengthen Status signals and, thus increasing the
probability the new venture receives early-stage VC fund’ had also proven to be significant at the level of the research and had been supported at $p < .05$.

The factorial ANOVA test showed statistically significant relationships between the status of the entrepreneur and the probability that the new venture receives an early-stage venture capital fund. Furthermore, the univariate statistics also shown significant interaction effect between third party endorsers (Network Facilitators) and status of the entrepreneur on the perceived venture capital decision. Therefore we can assume, the findings can be generalized and applied to the population. The post analytics and the descriptive statistics (Table 6-Appendix) the average was 1.45 on the willingness to invest in the startup (on a 1-5 scale where 1 was extremely likely), where both the attributes were at “High”. Although, the statistics proved the interactional effect of the independent variables on the probability of receiving VC fund. Investors seemed to value the entrepreneur itself on higher level (when status is “high”, Network facilitators at its “low” with a mean of 2.13) than vice versa when the average was 2.3.

5. Discussion

This final section is going to provide the answer to the stated research questions, namely, “Can status serve as quality signal in early-stage venture capital investment round? Are third party affiliations able to amplify such signal?” Furthermore, well-reasoned answers will be provided on the theoretical and practical contributions in the academic topic of ‘Venture capital decision making’ and ‘Quality signaling’. Lastly, certain limitations will be discussed, in order to properly assess the results in the research, and to discuss some ideas for future research.
5.1 Contributions

The research aims to contribute, and add new insight in the topics of ‘Venture capital investment decision making’ more precisely ‘quality signals’ in early-stage venture capital decision making. New ventures are usually lack of financial information or track records at this investment period and VCs have to make decisions based on scraps of information in a highly uncertain environment.

From theoretical perspective, this study can contribute to previous literature in these topics. First and foremost, entrepreneurial characteristic in venture capital decision making were examined and particularly valued for their signaling role (eg.: Hsu, 2007; Burton et. al., 2001; Coleman, 1988; Baum and Silverman, 2004; Stuart et al., 1999; Amit et al., 1990; Hall and Hofer, 1993). However, the majority of the academic works were examined standalone signals of different entrepreneurial characteristics. For instance Hsu (2007), Gulati and Higins (2003) or Hoenig and colleges (2014), used prior experience of the entrepreneur to predict how investors value the new venture, and how likely they can obtain financial resources from VCs. Managerial experience also correlates with other novel works (eg.: Baum and Silverman, 2004; Podolny and Philips, 1993; Stern et al., 2014) which that human capital is highly significant signal in early-stage signal. These listings are not only reviewing prior literature but helps to understand the complexity of status. As a core contribution to prior literature, “Status” of the entrepreneur was examined in more complex manner. In contrarily to prior literature on status signal, where Podolny (1993,2001), Sauders and colleges (2012), Stuart and colleges (1999) or Kim and King (2014) all examined status signal with only one or relatively few attributes, this study combined some and argued that status in certain situations can be a set of different attribute. It reflects a recognizable but more complex attribute. Spence (1973) argued that signals should be noticeable, regardless the receiver aware of certain signals or not. Whet this assumption fully suits the base of the research since investors examining status signal but only
fractions of the status is visible for them. Reputation section was also implemented in the literature review and hypothesis development for two reasons. First it eliminates the confusion between the two signals, and second, more importantly, the part shed light on the correlation effect of the two (Stern et al., 2014, Shane and Stuart, 2002). The research not examined this relation statistically, however, there still statistically significant correlation effects what investors realized during the experiment. This correlation supports the conjecture that status can be presented as a set of different attributes and not just one which fits the different research areas. To get back on the track, the first hypothesis, which investigated status signal of the entrepreneur had been accepted. This finding supports previous studies on quality signaling, more precisely on status. Furthermore, it add new insights in venture capital decision making as well. The experiment was constructed the way that other attributes, such as prototypes, was presented in every scenario. Authors like Audretsch (2012), showed clear, feasible signal value of prototyping. Since the hypothetical startups had “existing, working prototype, which might applicable for industrial use” we can add another theoretical contribution, in which certain attributes valued more than others. Prototyping in this case represented a positive signal towards venture capitalist, however, they valued entrepreneurial attributes more in their decision. Therefore the study support the academic literature which states that entrepreneurial characteristics are core aspects in investment decision making (eg.: Hall and Hofer, 1993; Vinig and De Haan, 2005; Hsu, 2007; Baum and Silverman, 2004).

The second variable in the 2x2 fractional experiment was network facilitators. This variable was created in order to make networking process easier for entrepreneurs. To achieve this effect, different affiliations was introduced which can boost the entrepreneurs networking capabilities and providing them expertize on the other hand. Third party affiliations like VDOs or University incubators are proved to be valuable, standalone signals (Baum and Oliver, 1991; Stuart, 2000; Gulati and Higgins, 2003; Pollock et al., 2010), and are able to reduce the
environmental noisiness in early financial rounds (Stuart et al., 1999). The research assumed that third party signaling might unlock status signal if it remains unnoticed as well as amplify the signal when it is at a high level. The second assumption stands, there it can add value to existing literature in third party signalling. On the other hand, the results showed that when status signal was at ‘low’ level, investors willingness to invest in the new venture was lower as well, regardless, that the entrepreneur had an agreement with a venture development organisation. Lastly, the findings can support Plummer, Alisson and Connelly’s (2016) work, since the interaction in this case also delivered benefits to receive external capital.

All in all, the research was successful and the research question was answered, because both the stated hypoteses were statistically supported. Status can serve as quality signal in order to receive early-stage capital fund. Moreover, third party affiliation, like VDOs can boost interact with status and further boost the probability of early-stage capital investment.

It is important to state some practical implementations as well, based on the findings. Firstly, entrepreneurs could have a better insight on what attributes considered to be important for investors and how could they benefit from different signal interactions. Secondly, the statistics showed the entrepreneurs, who are relatively new on the market and represented as lower status actors, could benefit from this type of affiliations.

5.2 Future research and Limitations

After the assessment of the findings, it is necessary to express the limits and boundaries of this research, which also leave room for further investigations in the topics. From the perspective of the sample, it mainly consists Hungarian respondents. The limited time frame and university resources limits the research, and did not allow to execute a comprehensive research like most in the academic publications. Secondly, and most importantly, the variables in this form were not tested and validated before, which highly limits the reliability of the
research. Further limitations may occur from the complexity of the variable “Status”, the complex form of status in this research was not tested and validated previously with any methodology. Future research question can be addressed to investigate the results after the investment. The reliability of status signal can be measured by focusing after-investment periods, measuring profitability or startup performance in the long term. The research also limits the sample by the focus group, future research could address different industries or different investment periods, even earlier seed-stage decision making. Future research could also fine-tune or better define status signal and prove its interrelation effect with reputation.

6. Conclusion

The research aimed to add new insights for ‘Venture capital decision making’ and ‘Quality signaling’ which served as a theoretical baseline in the study. Status was examined in a more complex form in early-stage venture capital investment decision making. The study was important in several ways, first it provides better understanding on status signal, and states a new approach in understanding status. Secondly, the study provide a much broader overview on early-stage decision making, where VCs undertake a higher risk. A secondary variable was also involved in the study. Network facilitators as represented by third party affiliation, which can endorse the quality of the startup as well. The primary data was collected through a vignette experiment. The quantitative analysis proved that status indeed have a positive effect on investment allocation and third party affiliation also showed a standalone effect on the early-stage investment decision. Furthermore, the two variable are also interacting and create a joint effect on the dependent variable. The research extended the academic literature on quality signaling and VC investment decision making, but the true novelty value of this research relies on its unique approach to examine status signal and the visibility of that variable.
References


Appendices

Cover letter

[University of Amsterdam logo]

To whom it may concern,

My name is Istvan Zsarnay, and I am a master student at University of Amsterdam majoring Entrepreneurship and Innovation. This research aims to explore Venture Capital decision making in early-stage investment periods, more precisely entrepreneurial “Status” as a quality signal.

The completion of this survey takes 5 minutes only, and it is highly appreciated, and valued to get a better insight of VC decision making.

I would like to emphasise that all the responses will be handled confidentially and respondents will aim completely anonymous.

Thank you very much for your help in advance. If you have any question regarding the questioner or would like to receive any feedback or results, please do not hesitate to contact me.

Link to start the survey:

https://uvacommscience.eu.qualtrics.com/jfe/form/SV_b2EC66Mcr6XGckZ

(The link is unable to track identifying information of respondents)

Yours Faithfully,
Istvan Zsarnay
+36709340184
+31613577586
istvan.zsarnay@student.uva.nl

Appendix - 1 Cover Letter
Building blocks of the experiment

Do you have experience in the Venture Capital industry?

Yes

No

Country of residence

What is your age?

What is your gender?

Male

Female

In the next phase, you will receive a randomly generated startup. Please read the text carefully and answer the following questions.
**Scenario:** A startup firm is seeking early-stage VC funding, and now, the entrepreneur is presenting his/her business plan to you. Please assess the available information and make an investment decision.

The company's background is stated as follows:

The venture is relying on technological innovation and operates in the biotechnological industry. There is an existing, working prototype. The company states a clear value and potential, and the prototype might be applicable for industrial use. The firm is new, there was one investment by the founder and still owns 100% of the company. The venture has no financial track record since they are looking for an additional investment to execute production.

The entrepreneur, on the other hand, has a clear vision for future growth and expansion. He/She started this company right after finishing the PhD. in engineering in biotechnology at a renowned University. The executive does also know many reputable scientists in the field of biotechnology and He/She is a board member of a highly prestigious firm. The entrepreneur operates the company entirely, without the help of any Venture Development Organisation (VDO*) or Incubator.

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**Venture Development Organisations (VDO)** and University Incubators are representing two roles: providing **Expertise** and **Networking** capabilities.

*VDO = Third party affiliation that helps new startups to launch and grow. These firms usually offer mentorship programs, networking assistance or concept evaluations, in exchange for a certain fee.
**Scenario:** A startup firm is seeking early-stage VC funding, and now, the entrepreneur is presenting his/her business plan to you. Please assess the available information and make an investment decision.

**The company's background is stated as follows:**

The venture is relying on technological innovation and operates in the biotechnological industry. There is an existing, working prototype. The company states a clear value and potential, and the prototype might be applicable for industrial use. The firm is new, there was one investment by the founder and still owns 100% of the company. The venture has no financial track record since they are looking for an additional investment to execute production.

The entrepreneur, on the other hand, has a clear vision for future growth and expansion. He/She started this company right after finishing the PhD. in engineering in biotechnology at a renowned University. The executive does also know many reputable scientists in the field of biotechnology and He/She is a board member of a highly prestigious firm. The entrepreneur has a written agreement with a Venture Development Organisation.

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Venture Development Organisations (VDO)* and University Incubators are representing two roles: providing Expertize and Networking capabilities.

*VDO = Third party affiliation that helps new startups to launch and grow. These firms usually offer mentorship programs, networking assistance or concept evaluations, in exchange for a certain fee.

---

*Appendix - 4 Block 3 – Scenario*
Scenario: A startup firm is seeking early-stage VC funding, and now, the entrepreneur is presenting his/her business plan to you. Please assess the available information and make an investment decision.

The company's background is stated as follows:
The venture is relying on technological innovation and operates in the biotechnological industry. There is an existing, working prototype. The company states a clear value and potential, and the prototype might be applicable for industrial use. The firm is new, there was one investment by the founder and still owns 100% of the company. The venture has no financial track record since they are looking for an additional investment to execute production.
The entrepreneur, on the other hand, has a clear vision for future growth and expansion. He/She started this company right after finishing the bachelors in engineering in biotechnology at a lesser-known University. Therefore, the executive does not know so many reputable scientists in the field of biotechnology and did not have too much experience. The entrepreneur has a written agreement with a Venture Development Organisation.

Venture Development Organisations (VDO)* and University incubators are representing two roles: providing Expertise and Networking capabilities.

*VDO = Third party affiliation that helps new startups to launch and grow. These firms usually offer mentorship programs, networking assistance or concept evaluations, in exchange for a certain fee.
Scenario: A startup firm is seeking early-stage VC funding, and now, the entrepreneur is presenting his/her business plan to you. Please assess the available information and make an investment decision.

The company’s background is stated as follows:

The venture is relying on technological innovation and operates in the biotechnological industry. There is an existing, working prototype. The company states a clear value and potential, and the prototype might be applicable for industrial use. The firm is new, there was one investment by the founder and still owns 100% of the company. The venture has no financial track record since they are looking for an additional investment to execute production.

The entrepreneur, on the other hand, has a clear vision for future growth and expansion. He/She started this company right after finishing the bachelors in engineering in biotechnology at a lesser-known University. Therefore, the executive does not know so many reputable scientists in the field of biotechnology and did not have too much experience. The entrepreneur operates the company entirely, without the help of any Venture Development Organisation (VDO*) or Incubator.

Venture Development Organisations (VDO)* and University Incubators are representing two roles: providing Expertize and Networking capabilities.

*VDO = Third party affiliation that helps new startups to launch and grow. These firms usually offer mentorship programs, networking assistance or concept evaluations, in exchange for a certain fee.
How likely is that the new venture receives an early-stage VC fund from you?

<table>
<thead>
<tr>
<th>VC fund</th>
<th>Extremely likely</th>
<th>Somewhat likely</th>
<th>Neither likely nor unlikely</th>
<th>Somewhat unlikely</th>
<th>Extremely unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>◯</td>
<td>◯</td>
<td>◯</td>
<td>◯</td>
<td>◯</td>
<td>◯</td>
</tr>
</tbody>
</table>

How do you value this company as an investment opportunity, based on the available information? Please indicate your answer on the scale from 1-10.

1  2  3  4  5  6  7  8  9  10

Appendix - 7 Block 6 - VC valuation

Please indicate how strongly do you agree or disagree with the following two statements.

- I think the presented entrepreneur is highly competent for further developing the startup.
- I believe the entrepreneur has great networking capabilities.
- I feel confident that the entrepreneur has the necessary experience to make a financially successful firm.
- I would trust this entrepreneur with my investment.
- I think this entrepreneur will deliver quality work.
- I think the entrepreneur would easily handle problems in the future.
- The social capital or network of this entrepreneur would help him/her to make the firm financially successful.
- I feel confident that this entrepreneur would increase the probability of success and high returns in the future.

Appendix - 8 Block 7 - Manipulation Check
Tables and graphs

**Table 2 - High status distribution**

![High status distribution graph](image1)

**Table 3 - High NetF distribution**

![High NetF distribution graph](image2)

**Table 4 - Low NetF distribution**

![Low NetF distribution graph](image3)

**Table 5 - Low Status distribution**

![Low Status distribution graph](image4)

**Graph - 1 Status**

![Status graph](image5)

**Graph - 2 NetF**

![NetF graph](image6)
Table 6 – Descriptive Statistics

**Descriptive Statistics**

Dependent Variable: How likely is that the new venture receives an early-stage VC fund from you? – VC fund

<table>
<thead>
<tr>
<th>Status</th>
<th>NEtF</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
<td>3.68</td>
<td>1.342</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>2.30</td>
<td>.794</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.03</td>
<td>1.309</td>
<td>64</td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>2.13</td>
<td>.751</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1.45</td>
<td>.768</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.79</td>
<td>.826</td>
<td>63</td>
</tr>
<tr>
<td>Total</td>
<td>Low</td>
<td>2.92</td>
<td>1.339</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>1.87</td>
<td>.885</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.42</td>
<td>1.256</td>
<td>127</td>
</tr>
</tbody>
</table>

Table 7 - Factorial ANOVA

**Tests of Between-Subjects Effects**

Dependent Variable: How likely is that the new venture receives an early-stage VC fund from you? – VC fund

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Noncent. Parameter</th>
<th>Observed Power</th>
</tr>
</thead>
</table>
| Corrected Model| 85.963  
\(^a\)            | 3 | 28.654      | 31.213 | .000 | .432             | 93.638          | 1.000          |
| Intercept      | 722.845                 | 1 | 722.845     | 787.380 | .000 | .865             | 787.380         | 1.000          |
| Status         | 45.617                  | 1 | 45.617      | 49.690 | .000 | .288             | 49.690          | 1.000          |
| NEtF           | 33.282                  | 1 | 33.282      | 36.253 | .000 | .228             | 36.253          | 1.000          |
| Status * NEtF  | 3.915                   | 1 | 3.915       | 4.265  | .041 | .034             | 4.265           | .536           |
| Error          | 112.919                 | 123 | .918       |      |      |                   |                   |                |
| Total          | 941.000                 | 127 |            |      |      |                   |                   |                |
| Corrected Total| 198.882                 | 126 |            |      |      |                   |                   |                |

\(^a\) R Squared = .432 (Adjusted R Squared = .418)

b. Computed using alpha =