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Planning and Entrepreneurial success

The effects of Planning dimensions on Entrepreneurial success

This thesis is set out to indentify the influences the Planning dimensions: Precision, Progress, and External Orientation have on Entrepreneurial success in an incubator program. The research is performed under guidance of J. Kraaijenbrink and M. Ehrenhard of the University Twente.

T. Zwerus
University Twente
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UNIVERSITEIT TWENTE.

VENTURELAB TWENTE

Planning and Entrepreneurial success

Finding out what effect Planning Progress, Planning Precision, and External Orientation have on Entrepreneurial success of business start-ups in an incubation program

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Supervisor: Dr. Ir. Jeroen Kraaijenbrink
Telephone: +31 53 489 5443
E-mail: j.kraaijenbrink@utwente.nl

Supervisor: Dr. Michel Ehrenhard
Telephone: +31 53 489 4531
E-mail: m.l.ehrenhard@utwente.nl

Student: Thiemo Zwerus
Student number: S1064029
Telephone: +316 13 05 24 22
E-mail: t.zwerus@student.utwente.nl

Management Summary

Venture Lab Twente is a special incubator program of the University Twente, it is aimed at further developing entrepreneurs and their business ideas. The Venture Lab program benefits the University by providing data, and gives the possibility to study different entrepreneurial qualities. The focus in this research is on the planning qualities of the entrepreneurs participating in the Venture Lab program. Planning is an important part of entrepreneurship and business success, and Planning dimensions are used to predict possible Entrepreneurial success. The literature on planning determines that there are a large number of Planning dimensions. How these Planning dimensions relate to Entrepreneurial success of entrepreneurs in an incubator program is not yet clear. To find this, the planning skills of numerous entrepreneurs that joined the VentureLab program, in relation to their organizational performance is investigated. The focus is on three Planning dimensions that are thought to give a general overview of the influence of planning. These three are: Planning Precision, Planning Progress and External Orientation. The dimension Planning Precision concentrates on the type of planning, either being very elaborate/concrete, or short/vague, indicating how planning is used by entrepreneurs. The Planning Progress dimension concentrates on the completion of planned tasks. The execution of the plans tasks indicate if the planning is being followed. External Orientation is used to indicate what the influence of the environment is. A distinction is made between the influence of external contacts and meetings outside the Venture Lab program, and contacts made within the Venture Lab program.

The entrepreneurs in the Venture Lab program are obligated to track their weekly activities in a diary. The data for this research is based on the 'Next step'-question and concerns what tasks are planned for the coming weeks. The weekly diaries are quantified using a coding scheme and are compared to the findings of the Evaluation form. This Evaluation form has a number of performance indicators that are used to identify Entrepreneurial success. The performance indicators are based on the dimensions Confidence, Progress and Approach. The performance data is quantitative and is compared with the quantified Planning dimensions. First the data is coded into groups that makes comparison between high and low rated entrepreneurs clearer. The comparison is performed by use of a Kruskal Wallis analyzes, which indicates significant differences found between high, middle and low rated performance groups.

The findings surrounding Planning Progress indicate that only a small number of relations can be confirmed. This is not substantial enough to indicate that Planning Progress positively influences Entrepreneurial Performance. The statement based on the influence Planning Precision has on Entrepreneurial success, can only partially be supported. Although relations are found with every performance indicating *dimension*, it is not the case with all the performance *variables*. The dimension External Orientation as mentioned before is a twofold dimension, the results focused outside the program also show a partial confirmation, support is again found in all performance indicating *dimension* but not with all performance *variables*. The second part of the External Orientation dimension that focuses on the Venture Lab program did not find support in all dimensions.

Although the findings weakly support the theoretical framework, the evidence is not found to be substantial enough to fully confirm the hypotheses. Having the opportunity to alter the performance indicators may prove to be insightful in supporting the partially confirmed hypotheses.

Content

1 Introduction

At the University Twente a special incubator program is available to help develop entrepreneurs and their business ideas. The University gathers an extensive amount of research data on these entrepreneurs and their development. This research will focus on *planning*, planning is seen as an important part of entrepreneurship and business development. By making a business plan and developing a financial budget, entrepreneurs can for example apply for external funding (Mason & Stark, 2004). According to Merchant & Van Der Stede (2007), planning and budgeting systems produce written plans that clarify in which direction an organization wishes to go, what strategy it will use to achieve these goals, and what performance targets can be achieved. They force managers to think about the future, and to prepare their projections carefully.

In the literature on planning, different viewpoints can be found on implementation, and execution. Merchant & Van Der Stede (2007) state that fixed targets can rapidly become obsolete especially in a fast changing environment, and Henkoff (1990) argues that '*strategic planning has become overly bureaucratic, absurdly quantitative, and largely irrelevant*'. Other studies revealed that there is no positive relation between performance and planning (Honig & Karlsson, 2004). These statement are argued by Berry (1998), who emphasizes planning skills. He states that companies that having hampered growth do not posses strategic planning skills and this lack of strategic awareness forms a risk to the company. The majority of research sees the benefits of having a plan or goal in comparison to having no plan or goal. However, the disagreement on effectiveness may have its origin from the different Planning dimensions that can be found. In the literature a number of Planning dimensions are described, ranging from time horizon (how far in the future is planned for) to formalization, flexibility, and more.

The complexity of the relations between Planning dimensions and performance is increased by the shift in focus on each planning dimension. These shifts can occur during company development especially occur in a start-up company. In a fast changing environment, resources may shift rapidly and render pre-planned strategies obsolete. The fast moving environment is acknowledged by Bhide (1994). In this research he states that although planning may be successful in other business arenas, it does not fit the fast-moving environment of start-ups. Gruber (2007) has found, when it comes to entrepreneurial education and practice, an adaptive 'toolkit' approach to business planning is of great importance. These findings create the suggestion for additional research. By comparing the planning skills of numerous entrepreneurs that joined the VentureLab program, a possible relation to their organizational performance is studied.

The goal of this research is to further develop an understanding of successful entrepreneurial behaviour in focus on Planning dimensions. As mentioned before multiple Planning dimensions can be found in the literature. These dimensions can include but are not limited to: the locus of planning (depth of employee involvement), control attributes, planning flexibility, plan horizon length (Barringer & Bluedorn, 1999), comprehensiveness, formalization, participation, and focus (Grover & Segars, 2005). Since the time and data reserved for this research is limited, it does not allow an extensive investigation into all dimensions of planning described.

The dimensions are diverse and create many opportunities for additional research. A number of dimension are more obvious to investigate than others. A logical starting point in selecting dimensions is to select by focusing on the concept of planning. It is thought that the difference between a precise/ elaborate or a vague/ short, planning can be seen as a difference in concepts. The second dimension will focus on the execution of these tasks. The execution adds great value to the concept of planning, since having the same very concrete and elaborate plan every week cannot be seen as a good use of planning

capabilities. The execution concept focuses on the progress that is made with these written plans. The third and last dimension that is studied focuses on the situation on/in which these plans are created and performed. The influence of the environment on planning, and the interaction the planner has with this environment is investigated.

In the *'new approach'* of Garvin (1993), progress is identified as an important factor to strategic manufacturing initiatives. Progress includes reaching quantitative goals and specific milestones. The goals and milestones enable companies to track results while monitoring progress (R. S. Kaplan & Norton, 1996). This implies the importance of monitoring Progress of planning in combination to business performance. The focus is in this case not on the result but more on the milestones itself. This research focuses on the progress an entrepreneur makes with milestone setting. This is also found to be an important performance indicator in the research of Groen & Kraaijenbrink (2010) in which it is found that low rated entrepreneurs are focussed on one task specifically for a longer period time than high rated entrepreneur, who focussed on more tasks simultaneously.

The relationship between entrepreneurial performance and Precision can be found in the research of Eisenhardt (1999). He stated that business success is related to the ability to see threats and opportunities early and especially accurately. Mintzberg (1994) confirms that plans need articulation and precision although strategy making does not. Hence Precision is the valuable asset in business planning and business performance.

According to Miller and Friesen (1983) environmental scanning and business performance are strongly related. This research suggests that the focus on environmental scanning is much stronger in successful firms than in unsuccessful firms. These findings are confirmed by Barringer & Bluedorn (1999) especially in an entrepreneurial setting. To remain competitive, entrepreneurs need their External Orientation to find, to recognize, and to exploit opportunities when the environment changes. According to the discovery theory of Alvarez & Barney (2007), entrepreneurs discover opportunities and business ideas through changes in their External Environment. The strategy formulation in a discovery setting however, is complete and unchanging. Which in turn enables the traditional strategic planning capacities, that are likely to be helpful to the entrepreneur. This shows a relation between the environment through strategy formulation to planning, to business performance. This relation is also described in the article of Phaal, Farrukh, and Probert (2004) about technology road mapping: it supports planning, it can provide a focus for External Orientation, and it provides means for tracking. Merchant & Van Der Stede (2007) made a similar statement by suggesting by skipping the step strategy formulation and state that planning and budgeting are written plans that clarify in which direction an organization wishes to go.

Investigating these three dimensions creates a logical sequence in the research from first the concept of planning, followed by the execution of this planning, concluded by the influence of the environment on this planning. These three dimensions are thought to give a general overview of the influence of the different planning aspects. These dimensions are measured with the VentureLab data. In the theoretical framework these dimensions are further explained. The key aspect of this research is how Entrepreneurial success is influenced by planning. Therefore the research question is:

Which effect do Planning Progress, Planning Precision, and External Orientation have on Entrepreneurial success of business start-ups in an incubation program?

The main research question can be subdivided into three questions.

1. ***Does Planning Progress relate to Entrepreneurial success?***
2. ***Does Planning Precision relate to Entrepreneurial success?***
3. ***Does External Orientation relate to Entrepreneurial success?***

These three questions are the basis of the hypotheses and are further explained and answered. The dimension Precision concentrates on the type of planning. The Progress dimension concentrates on the completion of tasks. External Orientation is used to indicate what the influence of the environment is. A distinction is made between the influence of external contacts and meetings outside the Venture Lab program, and contacts made within the Venture Lab program. Entrepreneurial success in this research represents the VentureLab Twente standards for success .This is based on the VentureLab Evaluation Form and can be found in appendix 2. End Evaluation Form. VentureLab Twente offers a business development support for technology based start-ups and is a business growth accelerator of high-tech companies. This is done by given companies or start-ups free access to for example: weekly training sessions, meeting rooms, and personal coaching. (VentureLab Twente website, 05-05-2012 http://www.venturelabtwente.com/our-offer/)

The first chapter contains the theoretical framework, in which the foundation of this research is explained. This includes entrepreneurial success and Planning dimensions. The second chapter focuses on the method used, it describes how the performance indicators and Planning dimensions are found by use of a coding scheme and it explains the correlation found between the variables. By using these methods, a selection of variables is made and used to find results. These findings are discussed in the third chapter Results. The results are discussed in sequence to the three Planning dimensions on which the research questions are based on. The overall findings are discussed in the final chapter Conclusion and Discussion. Which also includes the practical implications and recommendations for future research.

2 Theoretical framework

Two general themes are discussed, starting with general information about entrepreneurship and Entrepreneurial success, followed by concept of planning from which the Planning dimensions are introduced and explained. The model in figure 1 shows the construction of Entrepreneurial success and the relation, Planning Progress, Planning Precision and External Orientation have with Entrepreneurial success. Since this is the focus point for this research, the hypotheses are aimed towards this relation.

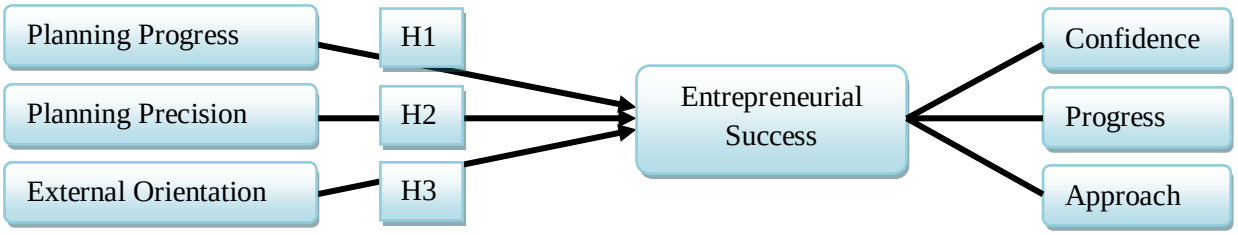

Fig. 1: Research design

2.1 Entrepreneurship

Different models of entrepreneurship are found in the theory of Barringer & Bluedorn (1999). They argue between different models. One being the traditional model, which is a systematic, prediction-oriented, and formal approach to planning that leads to higher performance. And second, the alternative model, in which the focus is on learning, strategic flexibility and balancing resource. This also confirms the traditional model of an *entrepreneur* that Groen & Kraaijenbrink (2010) describe. In their study they found that more insights can be gained in alternative models of entrepreneurship. Examples that are given are effectuation, improvisation, bricolage and the use of biases and heuristics. These insights are derivatives from the theories of Baker, Miner, and Eesley (2003), Baker & Nelson (2005), Busenitz & Barney (1997) and Sarasvathy & Dew (2005).

2.1.1 Entrepreneurial Success

Entrepreneurial success in this research is subdivided into three dimensions. These dimensions are given in figure 1 and are explained below. According to Brush and Van der Werf (1992) there is no consensus on how to measure Entrepreneurial Success. In the literature, support is found to divide Entrepreneurial success into three dimensions: Confidence, Progress, and Approach. These three dimensions represent parts of the entrepreneurial cognition. The variable indicating Confidence in performing business related tasks, is based on the research of Kolvereid & Isaksen (2006). Results indicated, that having strong beliefs about self employment would determine the intention to become self employed. For entrepreneurs this indicates a key concept while this refers to undertaking action. Therefore Entrepreneurial success is in this case linked to how undertaking the entrepreneur is. The dimension Progress is subtracted from the theory of Gartner, Shaver, Carter, and Reynolds (2004) on how nascent entrepreneurs develop a process of starting a firm. Because the performance of the nascent entrepreneurs is hard to measure the tasks already undertaken are used as indicator that can refer to tangible tasks. The theory of Gartner et al (2004) describes the link between the process of starting a firm and measurable performance. However, in this theory the difference between the activities entrepreneurs under take outside an incubator program and the activities inside an incubator program are not defined. The dimension Approach is based on the influence of Causation and Effectuation. It is found in the research by Chandler, DeTienne, McKelvie, and Mumford (2011) that Causation is negatively, and Effectuation is positively, associated with uncertainty. According to this research it is

expected that in an uncertain environment of entrepreneurs the effectuation principle is stronger represented. This means that effectuation is a performance indicator for entrepreneurial performance. However, the research of Sarasvathy (2001) underpins the difference in Causation and Effectuation principles for entrepreneurs. The relation to Entrepreneurial success is described by measuring entrepreneurial behaviour. Representing the same link as with Confidence, in which cognition is the main indicator. It is thought that especially the experience and business stage are of influence on the success of either principle.

2.2 Planning

The concept of planning according to Delmar & Shane (2003) is that it helps make decisions in balancing resources between demand and supply, transform goals into operational steps, and to formulate the expected results. The targets are set to achieve goals that serve the organizations best interests (Merchant & van der Stede, p.329, 2007). These goals can be created by strategic thinking in which a vague articulated vision of direction is given (Mintzberg, 1994a). Mintzberg (1994) also states that planning rests on three fallacies, one being: that prediction is possible, the second that strategy making can be formalized and third: that strategists can be detached from their strategies. After this general description of planning the individual dimensions are be explained below.

2.3 Planning Dimensions

This section will discuss planning from both ends of the spectrum. There are many studies that support the value of planning in small businesses and for entrepreneurs. In some cases the findings are very conclusive, as stated in the case of Liao & Gartner (2006) that nascent entrepreneurs who complete business plans are 2.6 times more likely to persist in the process of business emergence than entrepreneurs who lacked in planning. Or like Delmar & Shane (2003) who found positive results regarding planning. However, the research of Berry (1998) states that companies that lacking strategic planning are often the result of entrepreneurs with purely technical skills. This hampered growth and put the company at risk because of failing of strategic awareness (Berry, 1998). Honig & Karlsson (2004) had conclusive evidence that little results in terms of profitability are found for entrepreneurs that developed business plans during a two-year period. Which is also found by Lange et al (2007), unless an entrepreneur needed substantial start-up capital from external parties (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007). These contradicting findings may indicate that not only the concept of business planning is important but other factors play a role in planning and Entrepreneurial success as well.

The concept of planning that is described, can be best interpreted as a collection of different dimensions. The combination of these individual dimensions can make planning a success. There are numerous articles that subdivided the larger concept of planning into different dimensions. Barringer (1999) found a relationship between corporate entrepreneurship intensity, scanning intensity, planning flexibility, locus of planning, and strategic controls. In the literature there are many reoccurring dimensions described: time horizon, environment, opportunity recognition, strategy, precision, and flexibility. As described earlier, this research only focuses on a small selection of these dimensions namely: Planning Progress, Planning Precision, and External Orientation,.

2.3.1 Planning Progress

The first dimension that is tested is Planning Progress. Tan (2001) found that sound execution increases the chances for successful business performance in an uncertain environment. Apart from entrepreneurship, Brown & Eisenhardt (1997) found that links in time and sequenced steps are important in new product development. In this study it is tested whether progress in new business development needs to follow this sequence of steps and needs to follow through with these steps. This relates to the statement of Gruber (2007), who found that entrepreneurs get most value out of planning

when the planned task is speeded up. In the earlier mentioned research of Rue (1998) it is determined that best performing planners included anticipating and detecting the differences between the plan and actual performance. Comparing planned tasks with actual performed tasks helps in determining Progress. These insights, in combination with the research of Groen & Kraaijenbrink (2010) in which they found that high rated entrepreneurs plan more tasks simultaneously, create a link between Progress and Entrepreneurial success and is therefore the reason Planning Progress is measured. This is also found in the research of Garvin (1993) in which the concept of Strategic Manufacturing initiatives is discussed. It is found that improvements are found when both quantitative goals and specific milestones are used. This is stated by looking at tasks planned and at performing these planning tasks. It is also found by Stryker & Santaro (2012) that prediction on completion time influenced the eventual execution of the task. Therefore the first hypothesis is:

H1: Planning Progress positively influences Entrepreneurial success.

2.3.2 Planning Precision

Extensive planning is found by Brown & Eisenhardt (1997) to help performance. However, they found that extensive planning can also restrict business performance in a fast changing environment. On the contrary the research of Kaplan and Beinhocker (2003) found that planning should build to prepare minds. The more precise this plan, the better the mind is capable of making sound decisions. Positive results are also found by Newkirk & Lederer (2006). In this research it is found that the more extensive strategic information systems planning is, the greater the success. In addition: Newkirk & Lederer (2006) results are enhanced in an uncertain environment. Which is often the case with entrepreneurial firms.

The research of Smith & Mentzer (2010) confirms the effect of precise planning on business performance and it focuses on the connection between quality of the forecast, the perceptions of the user, and the impact on logistical performance. This research showed an improvement throughout the organization and supply chain. The emphasize of precision and concrete formulation is also assumed to provide results in the research of Di Giacomo & Patrizi (2010). However, this is aimed at top management goal and objective setting. The precise goal setting within companies is also found in the research of Jasillioniene & Tamosiuniene (2010). It is found that precise planning and implementation campaigns improve the performance of the company. The linkage between Planning Precision and Performance in different settings is confirmed, the one to one translation to entrepreneurial science is however, not found. The implications for entrepreneurship is therefore tested with the second hypothesis, which is:

H2: Planning Precision positively influences Entrepreneurial success.

2.3.3 External Orientation

The research of Newkirk & Lederer (2006) suggested that in uncertain environments, successful planning is achieved by extensive strategy formulation, which includes strategic awareness. This vision is shared by Cooper (2000). According to Cooper (2000) an extensive analysis is the starting point in the planning process. This view may be best explained using the research of Veliyath (1992). In his research it is found that strategic planning can be anticipatory or hindsight orientated. Anticipatory would focus on the firms *effectiveness* in managing the External Orientation and hindsight would emphasize *efficiency* in managing the External Orientation. The balance between these two depends largely on the environment. Emphasizing separated sets of strategic planning activities should optimize

firm's short and long term performance (Veliyath, 1992). This shows that the manner of External Orientation influences strategic planning activities and business performance. It is therefore stated that External Orientation is an important dimension to planning. Song & Montoya-Weiss (1998) identified strategic planning and market analysis as two of four key determinants of new product success. Greve & Salaff (2003) in their research about networking found that entrepreneurs communicate to more external connections during the planning phase than during other phases. The research of Jenkins & Johnson (1997) implies that entrepreneurial outcomes are associated with causal maps. These causal maps link the External Orientation to the internal operations. The research of Jenkins & Johnson (1997) also suggest that entrepreneurs should be focussing more on intuitive sense making as a planning model. This can identify critical relationships between the environment and business operations. Rue & Ibrahim (1998) suggest that the planning process is of importance to business performance and to an extent this process tried to identify external factors. In the research of Groen & Kraaijenbrink (2010) this external connection is also found but in a different way. In their research about planning they found that entrepreneurs with higher performance *planned* more interaction than lower rated ones. The link found in these articles is that the information that is gathered by these external connections feeds new ideas and opportunities. Which in turn are planned tasks and create new plans. Gatewood, Shaver, & Gartner (1995) found when starting a business, a number of the preparations are externally focussed. In their research a total of five categories are found, not all are externally focussed. The categories are: gathering market information, estimating potential profits, finishing the groundwork for the company, structuring the company, and setting up business operations. According to Daft (2010) this environment can be defined as: *'all elements that exist outside the boundary of the organization and have the potential to affect all or part of the organization'* (Daft, 2010, p. 220)

In summary ,the External Orientation is of great importance to an organization and this is supported by numerous authors. The relevance of planning toward Entrepreneurial success is strengthened by the findings in the research of Cooper (2000) in which he states that the planning process starts with an extensive analysis of the situation. The link from External Orientation to planning and performance is also found in the research of Song (1998). The link is found with new product development in which market analyzes, amongst others, is important for success. It is interesting to find out how this influences success for entrepreneurs in an incubator program. Therefore the third hypothesis is:

H3: External Orientation positively influences Entrepreneurial success.

These three hypotheses are investigated and the findings per hypothesis are discussed in the chapter Results and Conclusion. The execution of this investigation is discussed in the next chapter Method.

3 Method

VentureLab Twente is an incubator program of the University Twente. VentureLab Twente (henceforth, VLT) offers business development support for technology based start-ups and it is a business growth accelerator of high-tech companies. This is done by giving companies or start-ups, free access to for example: weekly training sessions, meeting rooms, and coaching. (VentureLab website, 05-05-2012) In return these entrepreneurs fill in a weekly report (app. 1, Weekly diaries) in which they answer four questions on four different subjects. Giving the possibility to conduct experimental research on entrepreneurship. With a timely response (every week) the entrepreneurs are monitored with almost no time lag between action/thoughts and monitoring. Since almost all types of entrepreneurs may enter the program there is a smaller change of a selection bias. The test group consists out of 179 entrepreneurs that are registered with the Venture Lab program. During two years period the data is collected, starting in January 2010 and ending in January 2012. The research group consists out of nascent entrepreneurs that are starting a technology based company.

The data for this research is extrapolated from the question: Next step, *'What are the next steps that you are going to undertake in the coming weeks?*'. The research goal of this study is to find out which effect the three before mentioned Planning dimensions have on Entrepreneurial success of business start-ups in an incubation program and if they can predict Entrepreneurial success.

Measuring entrepreneurial performance of emerging firms is problematic because there is no consensus among researchers as to what constitutes as Entrepreneurial success (Brush & Vanderwerf, 1992). Since this research is done for VLT and University Twente, their standard for indicators for performance are used, being: the Evaluation forms (app. 2: End Evaluation form).

3.1 The Performance Indicators

The Performance Indicators are found in the End Evaluation Form created by the Venture Lab Program (app. 2: End Evaluation form). The evaluation form is filled out by the entrepreneurs personally. The indicators for performance in this research are, Confidence in performing business related tasks, Satisfaction with Progress, Business Phase, Sales, Employees, Loans, Causation and Effectuation. Table 1, Performance indicators coding scheme, tries to clarify these indicators by using the three performance dimensions. These dimensions and variables are further explained in the following section.

Performance Indicators	Test variables	Indicators	Measurement
Confidence	Confidence	Confident in performing business tasks	18 questions about business related tasks are answered using a Likert-scale
	Progress Satisfaction	Satisfied with Progress	Satisfaction about progress during last four months is answered using a Likert-scale
		Expect Progress	Expected progress in the next four months is answered using a Liktert-scale
		Confident of realizing a growth company	Confidence to realize a growth company is answered using a Likert-scale
Progress	Business phase	Business Idea	There is a Well Defined Business Idea, answered using a Likert-scale
		Business Model	There is a Well Defined Business Model, answered using a Likert-scale
		Business Plan	There is a Well Defined Business Plan, answered using a Likert-scale
		Well Running Business	There is a Well Running Business, answered using a Likert-scale
	Sales	Sales	Sales in euro's made during the last four months
	Employees	FTE	The number of Full Time Equivelant of work
		Employees	The number of Employees needed to perform this work
		Salary	The average salary paid to employees and entrepreneur
Approach	Start up activities	Amount of Yes	28 start-up activities that can be undertaken, answered using yes or no.
	Loans	All types of loans	The amount in euro's that is loaned, profit returned to company, and own capital invested by the entrepreneur
	Causation & Effectuation	Causation	10 Causation related indicators that are answered using a Likert-scale
		Effectuation	10 Effectuation related indicators that are answered using a Likert-scale

Table 1: Performance indicators coding scheme.

Table 2 illustrates the correlation between these dependent variables. By investigating the data a non normal distribution is found and therefore a Spearman's rho correlation is needed for this analysis. The dependent variables are divided into three dimensions, Confidence, Progress and Approach. The dimensions and their variables are explained accordingly.

Spearman's rho		Confidence	Satisfied Of Progress	Expect Progress	Confident Of Growth	Average Satisfaction	DefinedBusinessIdea	Defined Business Model	Defined Business Plan	Well Running Business	Average Business Phase	FTE	Employees	Salary	Amount Of Yes	Loan Total	Causation	Effectuation
Confidence	Cor	1,000																
	Sig																	
	N	126																
Satisfied Of Progress	Cor	**,469****	1,000															
	Sig	,000																
	N	122	122															
Expect Progress	Cor	**,363****	**,487****	1,000														
	Sig	,000	,000															
	N	122	122	122														
Confident Of Growth	Cor	**,375****	**,433****	**,564****	1,000													
	Sig	,000	,000	,000														
	N	121	121	121	121													
Average Satisfaction	Cor	**,466****	**,726****	**,799****	**,738****	1,000												
	Sig	,000	,000	,000	,000													
	N	122	122	122	121	122												
Defined Business Idea	Cor	**,216***	**,223***	**,289****	**,295****	**,334****	1,000											
	Sig	,017	,014	,001	,001	,000												
	N	122	120	120	119	120	122											
Defined Business Model	Cor	**,193***	**,223***	**,252****	**,266****	**,288****	**,758****	1,000										
	Sig	,033	,014	,006	,003	,001	,000											
	N	122	120	120	119	120	122	122										
Defined Business Plan	Cor	**,210***	**,189***	**,224***	**,271****	**,323****	**,464****	**,582****	1,000									
	Sig	,020	,039	,014	,003	,000	,000	,000										
	N	122	120	120	119	120	122	122	122									
Well Running Business	Cor	,119	**,327****	**,226***	**,189***	**,336****	**,225***	**,322****	**,417****	1,000								
	Sig	,194	,000	,013	,039	,000	,013	,000	,000									
	N	122	120	120	119	120	122	122	122	122								
Average Business Phase	Cor	**,249****	**,348****	**,274****	**,349****	**,382****	**,720****	**,807****	**,707****	**,629****	1,000							
	Sig	,006	,000	,002	,000	,000	,000	,000	,000	,000								
	N	122	120	120	119	120	122	122	122	122	122							
FTE	Cor	,064	**,247****	,093	,082	,146	,178	**,255****	**,267****	**,397****	**,342****	1,000						
	Sig	,491	,008	,321	,382	,119	,056	,006	,004	,000	,000							
	N	117	116	116	115	116	115	115	115	115	115	117						
Employees	Cor	,116	**,242****	,117	,071	,137	**,206***	**,233***	**,224***	**,421****	**,325****	**,905****	1,000					
	Sig	,215	,010	,217	,456	,145	,029	,013	,017	,000	,000	,000						
	N	115	114	114	113	114	113	113	113	113	113	115	115					
Salary	Cor	,197	**,269****	,034	,000	,080	,016	-,008	,146	**,367****	,202	**,559****	**,517****	1,000				
	Sig	,059	,009	,744	,996	,446	,882	,938	,166	,000	,053	,000	,000					
	N	93	93	93	92	93	92	92	92	92	92	93	91	93				
Amount Of Yes	Cor	**,232****	**,198***	,176	**,203***	**,181***	,103	,047	,080	,142	,172	,113	,139	**,388****	1,000			
	Sig	,010	,029	,053	,026	,047	,261	,613	,382	,121	,059	,227	,139	,000				
	N	123	121	121	120	121	121	121	121	121	121	117	115	93	123			
Loan Total	Cor	,178	-,027	,111	**,217***	,124	,035	-,083	-,041	,055	,030	-,122	-,075	-,045	,169	1,000		
	Sig	,068	,788	,262	,028	,209	,728	,400	,680	,576	,764	,226	,460	,693	,084			
	N	106	104	104	103	104	104	104	104	104	104	101	99	79	105	106		
Causation	Cor	**,439****	**,246****	**,288****	**,468****	**,388****	**,318****	**,367****	**,369****	,159	**,351****	,176	**,202***	,177	**,299****	,065	1,000	
	Sig	,000	,007	,001	,000	,000	,000	,000	,000	,086	,000	,059	,032	,090	,001	,513		
	N	121	120	120	119	120	118	118	118	118	118	115	113	93	119	103	121	
Effectuation	Cor	**,354****	,112	,126	**,279****	,144	**,303****	**,235***	,106	-,016	**,201***	-,010	,018	,127	**,314****	,130	**,409****	1,000
	Sig	,000	,222	,169	,002	,117	,001	,010	,252	,862	,029	,917	,853	,224	,001	,192	,000	
	N	121	120	120	119	120	118	118	118	118	118	115	113	93	119	103	121	121

Table 2: Dependent variable Spearman's rho Correlation. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

3.1.1 Indicating Confidence

The dimension Confidence consists of two indicators, Confidence in performing business related tasks, and Satisfaction with Progress. The variable indicating Confidence in performing business related tasks is based on the research of Kolvereid & Isaksen (2006). Results indicate that having strong beliefs about self employment would determine the intention in becoming self employed. Therefore scoring high on performing these business related tasks would indicate a strong attitude towards self employment and so the higher the confidence level, the higher the entrepreneurial performance. The confidence level for each individual task can be given using a Likert-scale, ranging from 1: not at all confident, to 5: very confident. The variable is composed of 18 different tasks from which an average score is calculated. This gives an idea of the confidence level of the entrepreneur in performing these business related tasks. All 18 tasks are shown in appendix 2, End Evaluation Form subsection 7.2.1.

The second indicator for Confidence is Satisfaction with Progress, this indicator is a grouping name for three variables that are given below. Since these businesses are in a very nascent state it is difficult to judge their performance. Therefore the expected performance is sought by use of the following questions.

1. Expect Progress: I expect much progress in the next four months.
2. Confident Of Growth: I am confident to realize a growth company.
3. Satisfied Of Progress: I am satisfied about the progress I made in the last four months.

These variables are thought to give an indication of the confidence the entrepreneur has in its own business and future. The questions are answered using a Likert-Scale, and from these three variables a summation variable is also created, named: Average Satisfaction. This gives an overview of the satisfaction the entrepreneur has with its company, and gives the possibility to explain inconsistencies.

3.1.1.1 Correlations with Confidence

The variable Confidence shows it strongest correlation with the variable Satisfied of Progress of .47. The different Business Satisfaction-variables also all have a strong correlation with variables within the Confidence dimension. The strongest correlations of these Business Satisfaction variables are found with their summation variable, all showing a correlation stronger as .70. Aside from this summation variable, the strongest correlation is still found within the Confidence dimension. Satisfied of Progress shows a correlation with Expect Progress of .49, Expect Progress shows a correlation with Confident of Growth of .56, and this is also the strongest correlation of Confident of Growth. These correlations confirm that the variables are related to each other, which can in turn confirm the expectance of indicating Entrepreneurial success.

3.1.2 Indicating Progress

The dimension Progress is built out of the following four indicators: Business phase, Sales, Employees, and Salary. These four indicators are decomposed into variables and explained below.

Business phase is an indicator that is composed out of four variables namely: Defined Business Idea, Defined Business Model, Defined Business Plan, and Well Running Business. These four variables indicate in which business phase the entrepreneur is situated and are based on questions that are answered using a Likert Scale. The four statements are: There is a well-defined business idea, there is a well-defined business model, there is a well-defined business plan, and there is a well-running business. The variable concerning, if there is well defined business idea, is thought to clarify the *concept* of the company. It questions if the entrepreneur has a clear sense of the basis of the company and the possible commercialization of an idea. The business model variable describes the concept of the organization in how the entrepreneur thinks the business creates value. Having a high score will indicate that the entrepreneur agrees that there is a well defined business model. After considering the business idea and

model the formal implementation of these elements is checked. This is done by questioning if there is a Well defined business Plan. This may also include the reasons on why this idea and model is obtainable. The Well Running Business-variable means if the entrepreneur agrees or disagrees with the statement: 'is there a well running business'. This indicates if there is a well running business or not. These four questions are interrelated, the average score of these variables is therefore also taken into account. Scoring high on these variables means a further developed business and so higher entrepreneurial performance.

Since it is possible for entrepreneurs to already be actively in business, Sales, Employees and Average Salary are also taken into account. Sales is measured in turnover euro's. To find if there is growth in the amount of sales made, sales per month is asked and reaches back for four months. The total as well as the average of these four months is calculated. The amount of Employees an entrepreneur needs and is capable to hire, is measured using two standards. First the amount of full time equivalents, FTE's, is asked, second, the actual number of employees working for the company. The variable Salary indicates the average salary, including bonuses, in the company. This includes the entrepreneurs own salary and bonuses. Scoring higher on these variables would indicate higher entrepreneurial performance since it expected that the business is further developed. Having more Sales is a positive indicator for entrepreneurial performance, as are more employees, and a higher average Salary. Being able to pay high wages indicates making enough profit or freeing up other funds.

3.1.2.1 Correlations with Progress

The variables within the Progress dimension show their strongest correlation within their own dimension. This confirms the expected coherence of these variables. The four variables: Defined Business Idea, Defined Business Model, Defined Business Plan, and Well Running Business all show a very strong correlation with the summation variable Average Business Phase of respectively, .72, .81, .71, and .63. These variables also show a strong correlation with each other: Defined Business Idea and Defined Business Model show a correlation of .76, Defined Business Model and Define Business Plan show a correlation of .58, and Well Running Business with Defined Business Plan and Employees show a correlation of .42. Therefore it can be said that these variables are related to each other. The same can be said for FTE and Employees, showing a correlation of .90, which can be logically explained since these variables practically measure the same property only in different units of measure. The remaining variable Salary, also shows it strongest correlation of .56 and .52 with FTE and Employees. It can therefore be said that the variables that are part of the Progress dimension all show multiple significant correlations with and within their own dimension. This coherence confirms that the variables are related to each other and create the possibility to indicate entrepreneurial performance.

3.1.3 Indicating Approach

The third dependent variable dimension is Approach, Approach includes the variables that concern the process toward entrepreneurship. This includes the following four indicators: Start-up activities, Loans, Causation, and Effectuation.

The indicator Start-up activities is based on 28 yes or no questions and is based on the theory of Gartner, Shaver, et al. (2004). The questions can be found in appendix 2, End Evaluation Form in subsection 7.2.6. The variable indicates if an entrepreneur has performed many or few start-up activities. The questions include: did you spent a lot of time thinking about starting a business, and did you registered a business officially. Answering more questions with 'Yes' indicates multiple start-up activities and so a higher entrepreneurial performance.

The second indicator for business Progress is Loans. Loans are thought to give a good indication of as well Confidence as Progress. Confidence, since investing borrowed capital would indicate an

expectance of success, and Progress, since being able to obtain capital would be a good indicator of the business Progress. Acquiring capital via a bank or others, indicates that the business concept is well thought out and has the capability of high business performance. The amount of profit that is flowed back into the company is also taken into account. The types of loans/ resources that are included are: Personal Savings, Loans from Family, Loans from the Bank, Loan from the Top loan program, Loans from Business Angels, Loans from Venture Capital, Other types of Loans, and Profit returned to Company. For these individual variables not enough data is found so they are not be included in the analyses. The total amount of loans however, contains enough information to be used in the analyzes. This variable is the summation of all loans related variables, including Profit returned to company.

The final indicator of Approach consist out of two variables, Causation and Effectuation. The influence of the Causation and Effectuation approach on business performance is based on the research of Chandler, DeTienne, Mckelvie, & Mumford (2011). This research indicates that Causation is negatively associated with uncertainty and Effectuation is positively associated with uncertainty. The difference in these approaches can be best explained by the theory of Sarasvathy (2001). Entrepreneurs that act according to the Causation principle take a particular effect as a given and select the means to create this effect and so, select based on expected return. The entrepreneurs that have a more resource based view act according to the effectuation principle and focuses on selecting between different effects that can be generated with these resources. This makes the selection aimed at an affordable loss or acceptable risk instead of selecting by expecting a certain return (Sarasvathy, 2001). Judging which variable is an indicator for high entrepreneurial performance is difficult since each variable works in different situation. Sarasvathy (2001) indicated that the Effectuation principle is good for inventing the product and operation. However, once you have a working principle you need Causation to grow. In the article of Sarasvathy (2001) the uncertainty aspect of Chandler et al. (2011) is also found however, Sarasvathy indicated that Effectuation is used by expert entrepreneurs in situation of uncertainty. However, if Effectuation firms fail, they will do so in a very early stage and so reducing investment loss. The variables can be found in appendix 2, End Evaluation Form, subsection 7.2.8. It concerns 20 questions, 10 referring to Causation and 10 referring to Effectuation. Each question is answered using a Likert-scale ranging from 1: Strongly disagree, till 5: Strongly agree. When looking to the relation of Causation and Effectuation with the other dependent variables for entrepreneurial performance it should be mentioned that the Causation variable has more significant relations with these performance indicators. However, in both cases, a positive relation is seen as positive indicator for business performance.

3.1.3.1 Correlations with Approach

The dimension Approach is built out of four variables: Amount of Yes, Loans, Causation and Effectuation. Although most variables show their strongest correlation within their dimension there are some exceptions. The variable Amount of Yes, which refers to start-up activities undertaken, shows a correlation with Effectuation of .31 however, the strongest correlation is found with Salary , from the Progress dimension, only this correlation is not found to be reliable since the measurement group is smaller than 100 entrepreneurs.

Loans does not show strong correlations with the exception of a .22 correlation with Confident of Growth. This is the only significant relation and is a very weak correlation, and are therefore not included in the Kruskal-Wallis analyzes. Causation and Effectuation show a significant correlation with each other. It is interesting to find a positive correlation between these two variables since it is expected that the entrepreneur would either use the Causation or the Effectuation principle. The relative strong correlation between these variables is therefore also remarkable. Causation also shows stronger correlation with Confidence of .44 and Confident of Growth of .47, Effectuation does not show such correlations outside the Approach dimension. The implication for this research are diverse, finding correlations outside the Approach dimension can also be interpreted as a positive development. It would

indicate that Causation is correlated with other performance indicators and can therefore also be seen as a good performance indicator, the correlation between Effectuation and Causation of .41 undermines the theory, in which a difference is made between these two principle and their influence on business performance. The solution to this issue may lie in this strong correlation, it may indicate that in this research this distinct difference between these approaches is not found and scoring high on either variable would indicate a higher business performance.

3.2 The Planning Variables

The independent variables are divided into three dimensions: Planning Progress, Planning Precision, External Orientation. These dimensions and their respected variables are explained in this chapter. The independent variables are all averages, this average is calculated by adding the weekly diary scores per entrepreneur and dividing this by the number of weeks an entrepreneur is in the VentureLab program.

The Planning dimensions are the bases for the coding scheme. Every dimension has its own variables that is explained in the next chapter. The variables that should indicate Planning Precision, Planning Progress or External Orientation, are subdivided and made measurable. For clarity reasons, External Orientation is from this point on divided into two dimensions. The first External Orientation, and second VLT dependency. The data from VLT diaries are short written texts, names, subjects and characters are deducted relatively objective. However, there are indicators that ask for an interpretation of the data, such as Concreteness. It is important to have clear requirements for measuring. The coding scheme is used as a step-by-step guide to quantify the data, and is displayed below in table 3.

Planning dimension	Test variables	Indicators	Measurement
Planning Progression	Subject	Number of subject	The number of different tasks an entrepreneur plans every week
	Repetition (Reverse measure)	Repetition of subjects	Number of times of repeating the subjects that were mentioned in the week before
Planning Precision	Concreteness	1 till 5 Scale, 1 being very concrete and 5 being very vague	1) None of S.M.A.R.T. terms 2) Relevant 3) Acceptable and Relevant 4) Specific, Acceptable, Relevant 5) Specific, Acceptable, Relevant, Timely, and possibly Measurable
	Characters	Number of characters	# of characters an entrepreneur uses to describe 'next step'
External Orientation	Third party contact	Names of person	The number of named persons
		Locations	The number of location were meetings can occur
		Reference to Persons	Refering to persons by other means as name
		Sum Person	The summation of the two Person variables
		Sum External	The summation of the two Person variables plus Locations
	VLT dependancy (Reverse measure)	Coach	The number of names of Coaches, the word; *coach* and its pseudoniems
		VLT board	The number of times mentioning; board, and reference to VLT performance indicators
		Reference to VLT	The number of reference to classes and the VLT program
		Sum VLT	The summation of the three before mentioned VLT variables

Table 3: Coding scheme independent variables

The coding scheme improves the measurability and having an uniform measuring tool also improves the validity. This coding scheme also improves reproducibility, objectivity, and structure, that further limit the reliability bias. The data that is quantified using this coding scheme is displayed below in a correlation analyzes, given in table 4. Although many significant relations are found the strongest relations are in most cases found in their own group.

Spearman's rho		Subjects	Repitition	Concreteness	Characters	Person	Location	RefPerson	SomPerson	SomExternal	VLTcoach	VLTboard	VLTreference	SomVLT
Subjects	Correlatio	1,000												
	Sig. (2-													
	N	179												
Repitition	Correlatio	,293**	1,000											
	Sig. (2-	,000												
	N	179	179											
Concreteness	Correlatio	,587**	,133	1,000										
	Sig. (2-	,000	,076											
	N	179	179	179										
Characters	Correlatio	,622**	-,001	,581**	1,000									
	Sig. (2-	,000	,994	,000										
	N	179	179	179	179									
Person	Correlatio	,341**	,029	,192*	,280**	1,000								
	Sig. (2-	,000	,695	,010	,000									
	N	179	179	179	179	179								
Location	Correlatio	,280**	,234**	,199**	,178*	,266**	1,000							
	Sig. (2-	,000	,002	,008	,017	,000								
	N	179	179	179	179	179	179							
RefPerson	Correlatio	,355**	,170*	,288**	,264**	,376**	,326**	1,000						
	Sig. (2-	,000	,023	,000	,000	,000	,000							
	N	179	179	179	179	179	179	179						
SomPerson	Correlatio	,436**	,017	,345**	,396**	,740**	,284**	,724**	1,000					
	Sig. (2-	,000	,818	,000	,000	,000	,000	,000						
	N	179	179	179	179	179	179	179	179					
SomExternal	Correlatio	,511**	,075	,403**	,471**	,702**	,439**	,675**	,910**	1,000				
	Sig. (2-	,000	,315	,000	,000	,000	,000	,000	,000					
	N	179	179	179	179	179	179	179	179	179				
VLTcoach	Correlatio	,168*	,104	,061	,175*	,172*	,076	,076	,139	,146	1,000			
	Sig. (2-	,025	,164	,419	,019	,022	,311	,309	,064	,051				
	N	179	179	179	179	179	179	179	179	179	179			
VLTboard	Correlatio	,130	,067	,064	,065	,149*	,041	,070	,130	,130	,142	1,000		
	Sig. (2-	,083	,372	,396	,388	,047	,587	,349	,083	,083	,058			
	N	179	179	179	179	179	179	179	179	179	179	179		
VLTreference	Correlatio	,194**	,214**	,074	,159*	,249**	,125	,024	,121	,120	,477**	,139	1,000	
	Sig. (2-	,009	,004	,328	,033	,001	,096	,754	,106	,109	,000	,064		
	N	179	179	179	179	179	179	179	179	179	179	179	179	
SomVLT	Correlatio	,207**	,167*	,124	,191*	,190*	,112	,010	,107	,140	,740**	,129	,810**	1,000
	Sig. (2-	,005	,025	,099	,010	,011	,134	,890	,153	,061	,000	,086	,000	
	N	179	179	179	179	179	179	179	179	179	179	179	179	179

Table 4: Independent variable Spearman's Rho Correlation. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

The variables per dimension are described in the following chapters and the significant relations are explained accordingly.

3.2.1 Planning Progress

The explanation starts with Planning Progress. Working with task completion prediction helps to initiate action (Buehler, Peetz, & Griffin, 2010) and finishing multiple task relates to progress. Hence planning with deadlines helps tasks completion and so progress. In the research of Groen & Kraaijenbrink (2010) it is found that high rated entrepreneurs are dealing with more topics at once in comparison to lower rated entrepreneurs. This underlines the fact that planning multiple tasks every week will generate more value for the entrepreneur. To explore if this relation holds, Progress is measured by using the average amount of subjects an entrepreneur plans every week. These subjects relate to tasks that are planned for the week and have a deadline by the ending of the week.

Counting the number of tasks an entrepreneur plans to execute every week and directly relating this to performance is one amongst two measures to indicate Progress. The second measurement is Repetition. It is mentioned in the article of Pozen (2011) that it is not the time spend on a job which creates value but the results. The variable Repetition is formed through the repetitiveness in planned tasks. The entrepreneur can plan the same task every week and so, make no progress. New tasks are needed to ensure entrepreneurial progress. It is expected that the higher the repetition value, the lower the entrepreneurial performance. This is also based on the research Groen & Kraaijenbrink (2010) who found that lower rated entrepreneurs are focused on one task for a longer period of time. Although no accounts can be made for large tasks that take up more time and are repeated several weeks, it is expected that these tasks, with a successful entrepreneur, are divided into smaller steps. Meaning that Progress is still at hand and measurable.

3.2.2 Correlations with Progress

It should be mentioned that however, the two variables of the Progress dimension show a significant correlation with each other, the correlation is not very strong, .29. Especially Subjects shows stronger correlations with other independent variables, for example Subjects with Characters shows a correlation of .62, and Subjects with Concreteness shows a correlation of .59. The correlation between the amount of subjects and the amount of characters can logically be explained, since describing more subjects automatically increases the amount of characters, and is therefore expected. The relation found between Subjects and Concreteness is harder to explain. It can be the results of entrepreneurs that plan multiple subjects and make a clear distinction between these subjects. This distinction, can make it more concrete. The variable Repetition, as mentioned before, shows significant correlation within the Progress dimension, but this correlation is not strong, .29, however, the significant correlation that is found outside the Progress dimension is weaker.

The correlations found within the Progress dimension are not as expected, although the correlation found with the variables outside this dimension is explained, it does not support the expected coherence between both variables. However, finding coherence with the other variables outside the Progress dimension indicates that these Progress - variables are valuable for use in this research.

3.2.3 Planning Precision

How Precision relates to Entrepreneurial success is explained in the theoretical framework. How to measure Precision however, is not yet discussed. There are again two variables which indicate if an entrepreneur is precise in planning or not. This is based on the research of Thune (1970) in which a separation is made between formal and informal planners, indicating a difference in performance. Formal planners are seen as companies that used specific action programs, projects, and procedures for achieving goals, and this specific goal setting reflects to the concreteness indicator.

The first variable is: Concreteness. The formulation used by an entrepreneur to answer the 'Next step' question can be either explicit in describing which steps are undertaken, including time, or very vague in which the entrepreneur uses abstract subjects or describes nonsense tasks. This is judged on a scale from 1 till 5, 1 being very vague and 5 being very concrete. Before grading, clear and uniform criteria are produced to ensure reproducibility. The criteria for measuring Concreteness is based on the S.M.A.R.T. method which is often used as a mnemonic tool to create objectives in project management. This method is for example used in the book of R. Grit (2005) about successful project management. The S.M.A.R.T. method is an abbreviation of five terms, namely: Specific, Measurable, Acceptable, Relevant, and Timely. Judging if these terms are used is done according to the following questions. Specific: is the planning clear and unambiguous? Are the requirements are clear? Measurable: are there criteria for measuring progress? Acceptable: goals are not to extreme? and how can these be accomplished?. Relevant: does it matter, is it worthwhile or is there a need? Timely: is there a deadline

and when? When the 'Next step'-information of an entrepreneur contains all five indicators this is graded with a five and so be concrete, if none of the indicators are found this is graded a one and not concrete. This method is also used in the research of Eshlaghy, Radfar, Kivi, & Lee (2008) concerning the evaluation of performance of the strategic plan, by using the S.M.A.R.T. method as a weighing tool.

The second variable to measure Planning Precision is the number of character an entrepreneur uses to describe its next step. This is based on the article of Frese et al. (2007), in which an elaborate and proactive planning relates to business size and external evaluation of business success. It is thought that this can be made measureable by looking at the amount of characters an entrepreneur uses to describe the *next step* question, higher amounts indicate a more elaborate planning, which in turn influence business success. According to Acur & Englyst (2006) the current literature indicates that accuracy and detail are of great importance but also indicate that this might be overrated. However, based on the theory of Brown & Eisenhardt (1997) and Newkirk & Lederer (2006) it is found that in certain situation extensiveness would improve performance. This is made measurable by the size in characters, of the planning.

3.2.4 Correlations with Precision

In the dimension Precision, the strongest correlations are not found amongst each other. Although strong correlations are found between Concreteness and Characters of .58, stronger correlation are found between Concreteness and Subjects of .59 and between Characters and Subjects a correlation of .62 is found. These correlations are already discussed in the correlations section of the Progress chapter and included a logical explanation of the interrelation between these two dimensions. Although the findings between the Precision dimension and the Progress dimension can be explained they weaken the concept of these dimensions. The effect of the correlations can have multiple implication, either both dimensions measure the same, or entrepreneurs that score high in either dimension also score high on the other. However, the strong correlation between the variables, Concreteness and Characters, suggests that there is a coherence and this dimension can be used to predict Entrepreneurial success.

3.2.5 External Orientation

External Orientation is measured using two dimensions. The External Orientation can be focussed on outside the VLT program, and can also be focussed on the VLT program itself. First the focus of the environment outside of the program is clarified. The second dimension concerns the focus on the VLT program, this is discussed as *VLT dependency* and is explained in the next chapter. The measurement of External Orientation is based on the research Narver & Slater (1990) who linked External Orientation to profitability of the business. This orientation is constructed out of three pillars: customer orientation, competitor orientation, and interfunctional orientation. The entrepreneurs do not mention in which context these External Orientations are used. Therefore the general theory is tested and all external contacts are measured.

If an entrepreneur is focussed on its environment and is scanning actively there are more references to this in the diaries. The research of Greve & Salaff (2003) found a development in time an entrepreneur spends on networking. It is found that entrepreneurs communicate with more *people* in their network during the planning phase than during other phases. This type of external contact is seen as part of External Orientation (Brown & Eisenhardt, 1997). To identify communicating to other people in the data, *names* and *locations* in the diaries are the indicators. Persons mentioned by name, Persons referred to by other means, the summation of these two, locations mentioned, and the summation of the three individual variables are measured to identify External Orientation. This only includes data outside of the entrepreneurial firm. The names of the VLT coaches are excluded considering that the focus is on external contacts. The relevance of real time face to face contact for accomplishment of complex tasks is also found in the literature. (Stryker & Santoro, 2012). Combining these two views indicates that,

measuring human interaction can link external contact with business performance. Linking external factors to profitability of business is also done in the research of Narver & Slater (1990) and state that external contacts are often used to investigate the market.

3.2.6 Correlations with External Orientation

External Orientation is based on three variables, Persons, Locations and Ref Persons. External Orientation is also the first independent dimension that has summation variables, namely: Sum of Persons and Sum External. It is therefore logical that the individual variables in these groups show a strong relation to these summation variables, as is the case. Persons shows a correlation of respectively .74 and .70 with Sum of Persons and Sum External, Location shows significant correlations of .28 and .44, and Ref Persons correlations of . 72 and .68. However, the three individual variables, apart from the summation variables, also show their strongest correlation with variables within the External Orientation dimension. The correlation between Persons and Ref Persons is .38, between Location and Ref Persons a correlation of .33 is found, and Ref Persons also shows its strongest correlation with Persons of .38. These correlations indicate that entrepreneurs that mention external contact, on whatever level, are related to each other and the dimension External Orientation and its variables are connected.

3.2.7 VLT Dependency

The before mentioned External Orientated variables relate positively to the increasing amount of external contacts. The second indicator of the External Orientation dimension is VLT dependency, which is thought to be a negative indicator for entrepreneurial performance. It is thought that entrepreneurs that are focussed on their fit with the incubator program, are not focussed on the performance and planning of their company. Which according to Delmar & Shane (2003) helps make decisions in balancing resources between demand and supply and transform goals into operational steps. This false sense of responsibility towards the VLT program is found in the data as references to the VLT program. The research of Groen & Kraaijenbrink (2010) indicate that there is a relation between business performance and reference to third parties outside the VLT program, but they did not study the relationship between business performance and references to the VLT program. This gap is investigated in this research. VLT Dependency is divided into three measurable variables: VLT coach, VLT board, and VLT reference. These three variables are pooled with the summation variable, Sum VLT.

The primary connection between the entrepreneur and the VLT program is the coach. This is a personal mentor to the entrepreneur. The VLT coach helps the entrepreneur with creating a business plan and a personal development plan. The entrepreneur can either refer to the coach but can also refer to the program itself. Therefore the references to the program are also counted. The responsibility an entrepreneur senses toward the program is also thought to be found by looking at references made toward the VLT board. It is thought that the responsibility entrepreneurs feels toward the VLT program influences their self efficacy. Based on the research of Markmann, Baron and Balkin (2005) it is found that entrepreneurs that score higher on self-efficacy, score higher on overcoming setbacks and obstacles.

3.2.8 Correlations with VLT Dependency

The dimension VLT dependency is based on three variable: VLT coach, VLT board and VLT references, but also has a summation variable, Sum VLT. As with External Orientation, the individual variables show their strongest correlation with this summation variable. Except the variable VLT board which shows a stronger correlation with Persons, with a correlation of .15. It should be mentioned that VLT board is almost never mentioned by the entrepreneurs and is therefore removed from the research. The other variables, VLT coach and VLT reference show a significant correlation of .48 with each other. This strengthens the expectation of coherence between the variables and the possibility to indicate VLT dependency.

3.3 Control Variables

In social research the requirement for a causal relationship is that the effect is not influenced by a third variable (Babbie, 2010). For this research two variables are selected that might influence this relationship. Without monitoring the spuriousness of these relationships that are tested, the results of this research may have false implications. The two background variables that are tested are gender and the specific coach. The effect these control variables have on the before mentioned variable is tested.

3.4 Diary Processing

This research is performed on 195 entrepreneurs who participate in the Venture Lab program and filled out the weekly diaries. Not all 195 filled out the End Evaluation Form, perhaps partly due to the fact that there are still entrepreneurs taking part in the program and did not (yet) fill out the End Evaluation Form. In total 179 entrepreneurs are found to have filled out the End Evaluation form and the diaries. The average entrepreneur filled in 23 weekly diaries, this ranged from 1 till 70, and in total 4548 diaries are coded. The diaries are all averaged and the average values per entrepreneur are compared with the performance indicators. The 179 filled out End Evaluation Forms have missing values, however, all performance indicator variables that are used in the analyzes have more than 100 entries. The data is tested for normal distribution, although this is not obligatory for the independent variables. By using the Kolmogorov-Smirnov test and the Shapiro-Wilk test a non normal distribution is found. Therefore the data is transformed in multiple ways, a log transformation (log/(Xi)), a square root transformation (√Xi), a reciprocal transformation being (1/Xi) and 1/(Xhighest-Xi). However, this does not benefit the research, the decision is made not to transform the data but code the data for workability. Again the coding is performed in multiple ways, a coding from 1 till 5, low till high, is performed by using percentage distribution of 20% dividing the data in to 5 evenly distributed groups. The second modification is done by dividing the highest score by 5, creating an even value distribution. This means, if the highest score is 50 the groups are distributed by steps of 10, group 1, ranging from 0-10, group 2 from 10-20, and so on. However, groups of five limit the comparison between groups. Therefore a smaller distribution of three is chosen. The same methods are used with these groups of three. The best way that found to analyze the data is by percentage distribution of 33,3%. It is not always possible to comply to exact 33,3% since some entries have the same value. However, the distribution that came comes to a 33,3% distribution is chosen.

The three groups create a low, middle, and high rated performance score. By having three groups that have one grouping factor and are not normal distributed, a Kruskal-Wallis test should is used to find significant differences in the data. However, there are a large amount of independent and dependent variables and more than 530 relations are possible. Therefore a simple Spearman's rho correlation is first done to find possible significant combination that is later further investigated using the Kruskal-Wallis test. Table 5 displays the correlations between the independent and dependent variables by using a Spearman's rho correlation.

Spearman's rho		Subjects	Repitition	Concreteness	Characters	Person	Location	RefPerson	SomPerson	SomExternal	VLTcoach	VLTboard	VLTreference	SomVLT
Confidence	Correl	,084	**,179***	,140	-,096	,080	-,005	**,209***	,162	,135	-,052	,072	-,050	-,027
	Sig. (2	,348	,045	,118	,283	,373	,957	,019	,070	,131	,563	,421	,578	,766
	N	126	126	126	126	126	126	126	126	126	126	126	126	126
Satisfied Of Progress	Correl	,120	,029	,166	,081	,048	-,025	,101	,080	,061	-,093	-,017	-,042	-,055
	Sig. (2	,190	,748	,068	,376	,598	,784	,269	,384	,504	,309	,855	,646	,545
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Expect Progress	Correl	**,246****	,020	,165	**,227***	,133	,057	**,219***	**,221***	**,211***	,049	,016	,073	,085
	Sig. (2	,006	,825	,070	,012	,145	,530	,015	,015	,019	,593	,864	,423	,352
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Confident Of Growth	Correl	**,205***	-,012	**,191***	,120	,044	,083	**,217***	**,192***	,173	-,091	,003	-,081	-,069
	Sig. (2	,024	,892	,036	,190	,634	,363	,017	,035	,058	,318	,974	,375	,453
	N	121	121	121	121	121	121	121	121	121	121	121	121	121
Average Satisfaction	Correl	**,250****	0,03	0,16	0,17	0,1	0,03	0,15	0,17	0,14	-0	0,01	0,02	0,04
	Sig. (2	0,01	0,73	0,08	0,07	0,26	0,73	0,09	0,06	0,13	0,98	0,94	0,86	0,64
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Defined Business Idea	Correl	,127	,107	**,183***	,177	,057	-,083	,052	,057	,041	,135	,042	,102	,170
	Sig. (2	,164	,240	,044	,051	,530	,365	,573	,531	,657	,137	,643	,264	,062
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Defined Business Model	Correl	,162	,094	**,235****	,133	,072	-,048	,041	,029	,028	**,178***	,037	,058	**,178***
	Sig. (2	,075	,303	,009	,145	,429	,603	,652	,747	,758	,050	,684	,523	,049
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Defined Business Plan	Correl	,107	,008	,103	,081	,058	-,046	-,004	,037	,045	-,036	,100	,045	,080
	Sig. (2	,239	,927	,259	,377	,527	,612	,969	,690	,623	,697	,274	,620	,381
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Well Running Business	Correl	,059	,055	-,026	-,101	-,072	-,147	**-,191***	-,144	-,141	,026	,125	,033	,073
	Sig. (2	,519	,548	,777	,270	,428	,105	,035	,114	,120	,775	,171	,717	,426
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
Average Business Phase	Correl	,149	,098	**,199***	,077	,026	-,112	-,019	-,011	-,017	,128	,086	,061	,159
	Sig. (2	,102	,281	,028	,400	,780	,218	,835	,905	,853	,159	,348	,502	,080
	N	122	122	122	122	122	122	122	122	122	122	122	122	122
FTE	Correl	,068	-,021	,102	-,085	,090	-,104	-,004	,124	,151	-,088	,176	-,091	-,046
	Sig. (2	,469	,821	,275	,362	,334	,265	,962	,184	,103	,345	,058	,331	,624
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
Employees	Correl	-,003	-,068	,066	-,079	,049	-,129	-,078	,067	,130	-,167	,170	-,175	-,108
	Sig. (2	,979	,472	,484	,400	,605	,169	,405	,474	,167	,074	,069	,061	,249
	N	115	115	115	115	115	115	115	115	115	115	115	115	115
Salary	Correl	-,048	,000	,034	-,117	-,115	-,173	-,095	-,077	-,075	-,163	,182	-,165	-,157
	Sig. (2	,648	,997	,745	,263	,271	,098	,364	,466	,477	,118	,081	,114	,133
	N	93	93	93	93	93	93	93	93	93	93	93	93	93
Amount Of Yes	Correl	,049	-,032	,128	,014	-,070	,061	,157	,108	,071	**-,324****	,070	-,138	**-,299****
	Sig. (2	,587	,725	,159	,875	,441	,506	,083	,234	,436	,000	,441	,128	,001
	N	123	123	123	123	123	123	123	123	123	123	123	123	123
Loan Total	Correl	,023	,031	-,005	-,051	-,023	-,008	-,012	,015	,010	-,081	,043	-,182	**-,218***
	Sig. (2	,813	,755	,957	,604	,815	,936	,906	,881	,921	,409	,664	,062	,025
	N	106	106	106	106	106	106	106	106	106	106	106	106	106
Causation	Correl	,116	,049	**,195***	,011	,090	,155	**,256****	**,204***	**,186***	-,144	,157	-,113	-,113
	Sig. (2	,207	,595	,032	,905	,327	,091	,005	,025	,041	,116	,085	,216	,216
	N	121	121	121	121	121	121	121	121	121	121	121	121	121
Effectuation	Correl	-,091	,042	,106	,031	-,078	,095	**,231***	,128	,127	-,145	-,086	-,104	-,129
	Sig. (2	,323	,650	,246	,737	,397	,300	,011	,161	,164	,112	,350	,256	,159
	N	121	121	121	121	121	121	121	121	121	121	121	121	121

Table 5: Spearman's rho Correlation between independent and dependent variables. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

The correlations found using the Spearman's rho analyzes are used as a guideline for the Kruskal-Wallis analyzes. In total 25 significant correlations are found. These findings are explained in the chapter Results and include the direction of the found relation.

Concerning the dependent variables: Sales, FTE, Employees, Average Salary, Loans, and Satisfaction of Progress no significant relations with the independent variables are found. The variable Sales has to many missing values to be taken into account, and the same can be said about the variables Loans and Average Salary. This leaves the variables FTE, Employees, and Satisfaction about Progress. It is explained in the chapter The Performance Indicators that FTE and Employees are almost the same variable only identified in a different unit of measure . Although these variables are thought to be good indicators of entrepreneurial performance no relations are found. The same can be said about Satisfied of Progress, this variable shows a strong correlation with similar dependent variables such as Expect Progress and Confident of Growth but does not show any significant relations with the independent variables.

Although every dimension possesses variables that indicate business performance not every individual variable does. Independent variables that do not have a significant relation with the dependent variables are: Persons, Locations, VLT board, and VLT reference. It should be mentioned that when looking at Persons almost 50% of entrepreneurs never names a person. Almost 60% of the entrepreneurs never mention a Location. Almost 99% of the entrepreneurs never mention the VLT board and almost 40% does not use any references toward the VLT program. These large amounts variables not found is not the only reason these variables do not show a significant relation with the dependent variables. There are other independent variables that also show such numbers but these however, are significant related to the dependent variables. The interpretation of these variables is discussed in the chapter Conclusions and Discussion.

4 Results

As mentioned before the Spearman's Rho Correlation analyzes in table 5, is the guideline for creating the Kruskal-Wallis analyzes which is given below in table 6 and 7. The Kruskal-Wallis test indicates between which groups a significant difference is found. The independent variables are used as a grouping variable and the difference between the groups low, middle, and high, rated performance is looked for in comparison to the dependent variables. This difference can be found by looking at the Mean Rank Difference, M.R.D., between the groups: low, middle and high, respectively: 1, 2, and 3, and the significant level of this relation are given. The table is cut into two pieces, table 6 contains part 1 and table 7 contains part 2.

Part 1 of 2

	Groups	Confidence M.R.D.*	Confidence Sig.	Expect Progress M.R.D.*	Expect Progress Sig.	Confidence of Growth M.R.D.*	Confidence of Growth Sig.	Average Satisfaction M.R.D.*	Average Satisfaction Sig.	Well Defined Business Idea M.R.D.*	Well Defined Business Idea Sig.	Well Defined Business Model M.R.D.*	Well Defined Business Model Sig.
Subject	2-1	8,63	0,088	1,61	0,747	0,43	0,931	3,75	0,455	2,36	0,632	2,4	0,625
	3-2	-3,69	0,468	12,38	**0,013***	10,86	**0,029***	10,75	**0,032***	6,65	0,184	4,74	0,336
	3-1	4,78	0,329	13,04	**0,006****	10,9	**0,021***	13,11	**0,006****	8,55	0,079	6,57	0,165
Repetition	2-1	6,35	0,208	9,25	0,064	2,99	0,545	9,11	0,069	1,64	0,742	4,79	0,337
	3-2	4,95	0,351	-7,89	0,132	-3,57	0,493	-7,01	0,183	3,91	0,459	1,88	0,718
	3-1	9,91	**0,042***	3,09	0,509	0,05	0,99	3,52	0,457	4,73	0,316	5,87	0,212
Concreteness	2-1	12,14	**0,018***	12	**0,017***	9,69	0,052	12,2	**0,016***	13,42	**0,007****	8,66	0,083
	3-2	-3,78	0,444	-2,65	0,575	1,4	0,771	-3,19	0,508	-1,41	0,774	1,3	0,784
	3-1	7,06	0,152	7,6	0,101	9,44	0,051	7,66	0,115	12,56	**0,008****	9,46	**0,05***
Characters	2-1	2,34	0,651	6,56	0,198	2,32	0,646	3,16	0,539	-6,95	0,167	-7,38	0,145
	3-2	-8,17	0,107	7,12	0,148	4,58	0,352	6,55	0,187	14,12	**0,004****	16,29	**0,001****
	3-1	-5,65	0,243	11,64	**0,014***	6,39	0,178	9,01	0,058	8,43	0,077	11,26	**0,015***
RefPerson	2-1	1,27	0,8	11,94	**0,014***	13,26	**0,006****	10,88	**0,026***	0,68	0,887	-0,53	0,913
	3-2	12,8	**0,012***	0,99	0,843	-0,12	0,981	-1,04	0,837	1,76	0,726	3,44	0,491
	3-1	10,06	**0,039***	11,49	**0,017***	11,27	**0,019***	7,89	0,102	2,06	0,669	2,53	0,596
Sum Person	2-1	-0,9	0,858	7,84	0,112	8,11	0,096	3,59	0,468	-8,2	0,096	-1,88	0,707
	3-2	10,82	**0,034***	5,38	0,277	3,4	0,497	6,27	0,212	9,22	0,064	5,17	0,298
	3-1	8,48	0,082	11,17	**0,02***	9,67	0,042	8,81	0,067	1,9	0,691	2,94	0,529
Sum External	2-1	2,12	0,674	5,02	0,306	3,64	0,454	2,05	0,679	-10,72	**0,029***	-5,36	0,281
	3-2	5,72	0,253	7,51	0,119	5,8	0,234	5,5	0,261	11,16	**0,021***	7,37	0,129
	3-1	7,45	0,135	10,83	**0,028***	9,13	0,061	7,42	0,132	2,63	0,59	2,59	0,589
VLT coach	2-1	0,71	0,892	-1,37	0,791	-4,45	0,386	-1,8	0,73	2,5	0,629	-1,82	0,724
	3-2	-4,16	0,378	4,1	0,375	-0,78	0,867	1,74	0,708	7,33	0,114	10,05	**0,027***
	3-1	-3,29	0,521	3,31	0,512	-4,47	0,376	0,28	0,956	10,53	**0,038***	8,6	0,084
Sum VLT	2-1	4,51	0,368	-2,91	0,554	-2,88	0,557	0,29	0,953	7,64	0,121	-12,07	0,014
	3-2	-6,1	0,229	7,94	0,107	-0,86	0,862	2,8	0,572	2,03	0,683	-1,7	0,726
	3-1	-1,32	0,79	4,25	0,379	-3,64	0,446	2,21	0,65	9,56	**0,045***	8,18	0,082

* = Mean Rank Difference

Table 6: Difference between Mean Ranks and Significant levels, part 1. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

Part 2 of 2

		Well Running Business		Average Business Phase		Amount of Yes		Causation		Effectuation	
	Groups	M.R.D.*	Sig.	M.R.D.*	Sig.	M.R.D.*	Sig.	M.R.D.*	Sig.	M.R.D.*	Sig.
Subject	2-1	1,02	0,834	2,55	0,608	1,25	0,804	-1,01	0,841	-1,13	0,822
	3-2	2,67	0,63	5,91	0,24	1,56	0,771	7,58	0,131	-4,1	0,414
	3-1	2,96	0,526	7,82	0,103	2,7	0,573	6,1	0,198	-4,72	0,32
Repetition	2-1	4,62	0,344	6,8	0,175	-1,66	0,741	2,2	0,654	3,9	0,431
	3-2	-1,2	0,819	-0,64	0,904	-0,45	0,933	0,6	0,909	-1,16	0,825
	3-1	3,54	0,444	6,14	0,196	-1,77	0,711	2,9	0,547	2,78	0,563
Concreteness	2-1	9,09	0,068	14,33	**0,004****	3,44	0,497	10,44	**0,041***	3,48	0,496
	3-2	-10,49	**0,03***	-4,65	0,342	4,23	0,391	-0,02	0,996	3,05	0,53
	3-1	-2,01	0,663	10,76	**0,026***	6,68	0,17	10,01	**0,038***	5,32	0,27
Characters	2-1	-11,21	**0,025***	-9,7	0,056	-0,89	0,865	-4,01	0,435	3,25	0,526
	3-2	5,45	0,247	15,04	**0,002****	1,86	0,711	4,63	0,348	-1,69	0,732
	3-1	-4,18	0,38	5	0,296	0,84	0,861	1,16	0,807	1,41	0,768
RefPerson	2-1	-3,74	0,444	-0,23	0,963	-0,18	0,971	4,03	0,415	1,53	0,758
	3-2	-7,12	0,143	-1	0,844	9,57	0,06	10,2	**0,043***	12,02	**0,017***
	3-1	-9,62	**0,04***	-0,91	0,85	7,73	0,112	13,41	**0,005****	11,56	**0,015***
Sum Person	2-1	-6,7	0,177	-4,57	0,364	0,2	0,969	-1,46	0,77	4,22	0,399
	3-2	-1,63	0,735	4,04	0,422	6,38	0,208	12,96	**0,01****	3,3	0,509
	3-1	-7,22	0,123	-0,64	0,894	5,43	0,257	10,74	**0,024***	6,58	0,168
Sum External	2-1	-6,42	0,193	-8,98	0,073	0	1	-3,2	0,518	4,09	0,411
	3-2	-1,41	0,764	8,04	0,1	4,25	0,39	13,54	**0,006****	3,11	0,525
	3-1	-7,16	0,135	-0,48	0,922	3,71	0,451	10,19	**0,036***	6,65	0,173
VLT coach	2-1	-5,69	0,263	-0,4	0,939	-10,66	0,042*	-0,55	0,915	-5,32	0,301
	3-2	6,81	0,13	8,25	0,077	-6,92	0,138	-6,64	0,156	-3,21	0,495
	3-1	3,19	0,526	7,94	0,118	-18,2	**0****	-8,79	0,079	-7,46	0,136
Sum VLT	2-1	0	1	9,62	0,053	-10,02	**0,044***	-3,65	0,457	-0,95	0,845
	3-2	3,7	0,446	-0,39	0,938	-6,09	0,221	-2,76	0,582	-5,96	0,235
	3-1	3,92	0,408	8,3	0,084	-16,49	**0,001***	-5,97	0,218	-6,81	0,159

* = Mean Rank Difference

Table 7: Difference between Mean Ranks and Significant levels, part 2. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

Mentioning the calculated difference between the Mean Rank's gives an indication of the direction of the relation. It is interesting to find many negative relations in associated with the variable Well Running business. Also it should be mentioned that the summation variables all found similar relations as their individual variables. This concerns the independent summation variables: Sum Person, Sum External and Sum VLT, and the dependent summation variables: Average Business phase, Average Satisfaction.

The findings in table 6 and 7 are used to create table 8. This table displays the significant relations and gives an indication of the variance that can be explained by the independent variables towards the dependent variables.

	group	Confidence	Expect progress	Confident of Growth	Average Satisfaction	Defined Business Model	Defined Business Idea	Well Running Business	Average Business Phase	Amount of Yes	Causation	Effectuation
Subjects	1&2	3,5%	0,1%	0,0%	0,7%	0,3%	0,3%	0,1%	0,3%	0,1%	0,1%	0,1%
	2&3	0,6%	**7,6%***	**5,9%***	**5,6%***	2,1%	1,1%	0,3%	1,7%	0,1%	2,8%	0,8%
	1&3	1,2%	**10,2%****	**7,1%***	**10,1%****	4,2%	2,5%	0,5%	3,5%	0,4%	2,2%	1,4%
Repetition	1&2	2,0%	4,5%	0,5%	4,3%	0,1%	1,2%	1,2%	2,4%	0,1%	0,3%	0,8%
	2&3	0,9%	2,5%	0,5%	1,9%	0,6%	0,1%	0,1%	0,0%	0,0%	0,0%	0,1%
	1&3	**5,5%***	0,6%	0,0%	0,8%	1,4%	2,2%	0,8%	2,4%	0,2%	0,5%	0,5%
Concreteness	1&2	**6,4%***	**6,7%***	4,5%	**6,9%***	**8,6%****	3,6%	4,0%	**9,8%****	0,5%	**4,9%***	0,5%
	2&3	0,7%	0,4%	0,1%	0,6%	0,1%	0,1%	**6,0%***	1,1%	0,9%	0,0%	0,5%
	1&3	2,6%	3,4%	5,0%	3,2%	**8,9%****	**4,92%***	0,2%	**6,3%***	2,4%	**5,6%***	1,6%
Characters	1&2	0,2%	1,9%	0,2%	0,4%	2,2%	2,4%	**5,8%***	4,2%	0,0%	0,7%	0,5%
	2&3	3,1%	2,6%	1,1%	2,2%	**10,4%****	**14,1%****	1,7%	**11,7%****	0,2%	1,1%	0,2%
	1&3	1,8%	**8,1%***	2,5%	4,8%	4,2%	**7,9%***	1,0%	1,5%	0,0%	0,1%	0,1%
Ref Person	1&2	0,1%	**7,5%***	**9,6%****	**6,2%***	0,0%	0,0%	0,7%	0,0%	0,0%	0,8%	0,1%
	2&3	**7,1%***	0,1%	0,0%	0,1%	0,1%	0,6%	2,5%	0,1%	4,1%	**4,9%***	**6,8%***
	1&3	**5,4%***	**7,4%***	**7,3%***	3,5%	0,2%	0,4%	**5,5%***	0,1%	3,2%	**10,5%****	**7,8%***
Sum Person	1&2	0,0%	3,1%	3,4%	0,1%	3,3%	0,2%	2,2%	1,0%	0,0%	0,1%	0,9%
	2&3	**5,2%***	1,4%	0,6%	0,2%	4,1%	1,3%	0,1%	0,8%	1,9%	**8,2%****	0,5%
	1&3	3,8%	**7,2%***	**5,5%***	0,0%	0,2%	0,5%	3,2%	0,0%	1,7%	**6,8%***	2,5%
Sum External	1&2	0,2%	1,3%	0,7%	0,0%	**5,7%***	1,4%	2,0%	3,9%	0,0%	0,5%	0,8%
	2&3	1,6%	3,1%	1,8%	0,4%	**6,7%***	2,9%	0,1%	3,4%	0,9%	**9,7%****	0,5%
	1&3	2,7%	**6,0%***	4,4%	0,3%	0,4%	0,4%	2,8%	0,0%	0,7%	**5,7%***	2,4%
VLTcoach	1&2	0,0%	0,1%	0,8%	0,6%	0,3%	0,1%	1,4%	0,0%	**4,6%***	0,0%	1,2%
	2&3	1,1%	1,1%	0,0%	1,9%	3,6%	**7,0%***	3,3%	4,5%	3,1%	2,8%	6,5%
	1&3	0,5%	0,5%	1,0%	4,4%	**5,3%***	3,7%	0,5%	3,0%	**15,7%****	3,9%	2,8%
SumVLT	1&2	1,0%	0,4%	0,4%	0,2%	2,9%	**7,3%***	0,0%	4,6%	**4,9%***	0,7%	0,1%
	2&3	1,7%	3,2%	0,0%	1,6%	0,2%	0,2%	0,7%	0,0%	1,8%	0,4%	1,7%
	1&3	0,1%	1,0%	0,8%	2,8%	**5,2%***	3,9%	0,9%	3,9%	**14,8%****	2,0%	2,6%

Table 8: Relation between the independent and dependent variables, blue highlighting negative significant relations. P<.05 is highlighted with one '' symbol, p<.01 are highlighted using two '*' symbols*

These significant relations that are explained in accordance to the theoretical framework. From all the relations that are calculated, 54 are found to be significant, from which 13 are significant at a p<.01 level. The independent variables that have a significant relation between multiple paired groups are discussed more extensively as to independent variables that shows one significant difference between one paired group

The relations described are all found using Kruskal-Wallis, this indicates that the relations are significantly different between groups. This displays a relation, since scoring low in one group results in scoring high in another group.

4.1 Does Planning Progress relate to Entrepreneurial success?

The findings are described per independent variable dimension, the first is Planning Progress. The variables in this dimension are thought to give a good indication of the progress an entrepreneur makes with business tasks. The Subjects represents the amount of tasks that are planned and Repetition shows the amount of tasks that are repeated from week to week. This repetition means that the tasks are not yet finished and therefore pushed forward from week to week.

4.1.1 Subjects

It is found that in the groups of the variable Subjects there is a significant difference between group 2 and 3, the middle and high group, and 1 and 3, the low and high group. Since the groups are divided in three equal parts this means that the highest 33% of the amount of subjects, differs from the lower 66% when looking to the Expect Progress-variable. A positive relation is found and in the higher groups 10,2% of the variance could be explained by Subjects. The interpretation of this relation is as follows: having many subjects planned and so having more tasks in a week is related to making progress. This apparently a predictable relation, since having the capability to plan many tasks might predict having the capability in the future of performing many tasks and so expecting to make progress. This confirms the theoretical framework concept of the relation between Subjects and Progress.

Considering the statement given above is correct and the amount of subjects and future progress are related, it can also explain the relation between Subjects and Confidence of Growth. Although it is known that Progress and Growth are not the same, a Spearman's Rho correlation shows a significant correlation of .59. This means that these variables are related to each other. The relation between Subjects and Confident of Growth, although weaker, can be compared with Subjects and Expected Progress. Having a high amount of subjects is related to having more tasks/work, and 7.1% of the variance could be explained by Subjects. A logical explanation in this case is that a vast amount of tasks leads to an increase in the confidence level of the entrepreneur for expecting growth in the future.

Looking at the summation variable of Satisfied with Progress, Expect Progress, and Confident of Growth the same significant results are found and Subjects can explain 10,1% of the variance of Average Satisfaction.

4.1.2 Repetition

The data shows that Repetition and Confidence are significant different in one pair of groups. As mentioned before the dependent variable Confidence is a summation variable out of 18 questions. The average of this summation is found to be significantly different from Repetition between the groups 1/ low and group 3/ high. Looking at the data it shows that especially the lower group, group 1, has a very large group in the lower group of confidence. Since no significant difference is found between group 2/ middle and 3/ high, no conclusion of gradual growth can be made. However, the larger higher group that relate to the higher group of repetition is interesting. It should be kept in mind that a higher Repetition score is not expected to be an indicator of high entrepreneurial performance. According to the theoretical framework, scoring higher on the Repetition variable has a negative influence on the entrepreneurial performance, which cannot be supported. This difference can probably be clarified by the looking at variance that is explained, since 5.5% is not very high.

This unexpected relation may have multiple implications. One implication can be that entrepreneurs that are more confident are actually overly confident. Another may be that Repetition is not a good indicator for Entrepreneurial success since a large amount, almost 30%, of the entrepreneurs do not have any repetition. The 5,5% variance explained does not strengthen the credibility of this independent variable. However, the fact remains that a lower score on Repetition relates to a lower score on the Confident variable and vice versa.

4.1.3 Summary Planning Progress

In summation the Progress in planning can probably be best found by only using the variable Subjects. This variable confirms the theoretical expectation. The second variable of planning Progress, Repetition, has one significant, although weak relation which is also found to be contradicting towards the theoretical framework. The variable Subjects indicates that there is a predictive relation between the Planning Progress dimension and Confident of Growth and Expected Progress. It confirms the expectations that Subjects is an indicator of the dimension Planning Progress, and therefore can be used as an indicator of entrepreneurial performance. However, Subjects does not show a significant relation with all performance indicators, therefore not confirming the relation with both variables. Consequently, the first hypothesis cannot be confirmed.

H1: Planning Progress positively influences Entrepreneurial success.

The implications for not confirming this hypothesis is discussed in the chapter Conclusion & Discussion.

4.2 Does Planning Precision relate to Entrepreneurial success?

Concreteness and amount of Characters are indicators for the dimension Planning Precision. Concreteness is obtained via the resemblance of planning to S.M.A.R.T. method, and Characters is the simple calculation of the number of characters used.

4.2.1 Concreteness

The first significant difference is found between Concreteness and Confidence. This is only the case between group 1/ low and 2/ middle. Between these groups 6.4% of the variance could be explained by Concreteness. It is a positive relation which means that the entrepreneurs that had a low score with their Concreteness- variable also had a low score on their Confidence level. This means these entrepreneurs are less confident in performing business related tasks, and likewise for entrepreneurs who scored in the middle range of concreteness. Worth mentioning is that this relation is also found with Expect Progress, and a variance of 6.7% could be explained by Concreteness. These results are however, not found with entrepreneurs scoring high on Concreteness.

The second significant difference is found between the groups of Concreteness and Well Defined Business Model. The lower the Concreteness, the lower the Well Defined Business Model. A significant difference is found between group 1/ low and 2/ middle, and between group 1/ low and 3/ high. Between group 1/low and 2/ middle, 8.6% of the variance can be explained, and between group 1/ low and 3/ high, 8.9% of the variance can be explained. Although these values are not distinctive, finding significant differences between multiple groups indicates that concretely describing a planning in the VLT program relates to well defining a business model and vice versa.

As mentioned in the chapter Methods, there is a strong relation between Well Defined Business Idea, Well Defined Business Model, Well Defined Business Plan, and Well Running Business. However, the same relation Concreteness has with Well Defined Business Model is not found with the other variables. Although Well Defined Business Idea shows a weak significant difference between group 2/ middle and 3/ high. 4.9% of this variance can be explained by Concreteness.

Well Running Business also shows a weak relation in which 6.0% of the variance can be explained by Concreteness which is a negative relation. On the other hand when the summation variable Average Business Phase is observed a positive relation is found. This represents the results of the relations between Concreteness and Defined Business Model. This is in contrast with the variable Well-Running

Business. It is found that all other significant relations of Well-Running Business with the independent variables are negative.

Aside from the relations Concreteness has with Well Defined Business Model, Well Defined Business Idea and Well Running Business there is also a relation between Concreteness and Causation. There is a significant difference between group 1/ low and 2/ middle, and between group 2/ middle and 3/ high. The most clear picture that can be deducted is that of a linear relation between these two variables. The lower groups of Concreteness have a significant larger score in the lower groups of Causation and 4.9% of the variance can be explained. This also applies for the higher groups of Concreteness, that have a significantly larger group in the higher groups of Causation and 5.6% of the variance can be explained by Concreteness. It is interesting to find, or rather to not find, a difference between Concreteness and Effectuation because there is a strong correlation between Causation and Effectuation.

The findings between Concreteness and Causation can be best explained when describing the process of causation. Causation is focussed on selecting the most effective way to achieve a certain goal. Causation has a very explicit goal and so it is logical that entrepreneurs that work according to the Causation principle have a higher Concreteness in their plans as opposed to entrepreneurs working according to the Effectuation principle (Sarasvathy, 2001).

The groups that are often found to significantly differ from each other, are group 1/ low and 2/ middle. Significant difference are found between Concreteness and Expect Progress. Group 1/ low scores significant lower on Expect Progress as does group 2/ middle. This significance is also found when looking at the summation variable Average Satisfaction. Both show a positive relation which relates to the theoretical framework. It is expected that having a higher degree of Concreteness would positively influence entrepreneurial performance.

4.2.2 Characters

The variable Characters describes the amount of characters, on average, the entrepreneur uses to describe the planning for the coming week. It is found that the amount of characters significantly differs with Defined Business Model. This difference is found between group 2/ middle and 3/ high. 10.4% of this variance could be explained by Characters. A difference is also found with the variable Business Idea, but between multiple pairs of groups: in between group 2/ middle and 3/ high, with 14.1% variance explained, and in between groups 1/ low and 3/ high, with 7.9% variance explained. The before discussed unusual negative relation between the independent variable Concreteness and Well running business is again respectively found and again not found with the summation variable Average Business Phase. This implies that the Business Phase variable and Characters are not perfectly aligned but, business performance with the exception of the variable Well-Running Business, can be used to indicate Entrepreneurial success.

The variables Characters and Expect Progress show a significant difference between group 1 and 3, low and high amount of characters. It shows a large group scoring low on characters and low on Expect Progress, and it furthermore shows a large group scoring high on characters and high on Expect Progress and the variance that could be explained by Characters is 8.1%. The theoretical framework clarifies the connection between Characters and business performance as follows: it is expected that extensively and elaborate describing the plan, positively influences business performance. Which in this case leads to more progress expectance.

According to the findings the variable Characters shows that it can predict how well a business model is formed, how well a business idea is formed, and whether if the entrepreneur thinks to make progress in the next four months. The relation between amount of characters and Business Idea is clarified by the expectation that entrepreneurs that have better understanding of their business also have a better

understanding of the work needed to be done, hence increasing the description of the tasks and expanding the number of characters used.

It is worth mentioning that the connection found between Characters and Expect Progress is not found between Characters and Confident of Growth. This despite the correlation of .56 between Expect Progress and Confident of Growth. In this case it seems to indicate that there is a difference between expecting progress and confidence of growth, although they can be intertwined. Expecting progress does not always have to relate to growth. The increased number of characters used, may indicate that entrepreneurs who have the planned tasks thought out better and more elaborate, expect more from these plans. Having an extensively described planning, also indicates that the entrepreneurs, in some form have a plan.

4.2.3 Summary Planning Precision

Concreteness is found to be a good indicator of business performance. Although this relation is not found with all dependent variables the majority of dependent variable support the theoretical framework. The relations are found between Concreteness and Causation, and the business phase variables, with the exception of Well running Business which seems to be offset with all other findings.

In summary, an entrepreneur that has a very concrete way of planning, being Specific, Measurable, Acceptable, Relevant, and Timely, is likely to come to a higher entrepreneurial performance. For the variable Characters, not as many relations are found but still support the theoretical framework in which extensiveness in planning leads to Entrepreneurial success. Therefore the second hypothesis can partially be confirmed. Since relations are found with all *dimensions* but not with all *variables* the hypothesis can only partially be confirmed.

H2: Planning Precision positively influences Entrepreneurial success.

It is noteworthy that a relation with both variables Concreteness and Characters is only found within the dependent variable dimension Progress. However, the variable Concreteness is found to have significant relations with all dimensions.

4.3 Does External Orientation relate to Entrepreneurial success?

Since not all External Orientation variables are found to have a significant relation with the dependent variables this chapter only focuses on Ref Persons and the summation variables Sum of Persons and Sum External.

4.3.1 Reference to persons

Finding multiple relations of dependent variables in combination with Ref persons is surprising. It is surprising because these results are not found with the variable Person or Sum of person. Ref Persons is meant as a secondary variable that would in combination with Persons, create the main variable Sum of person. The reason this variable has more significant connection with the dependent variables might be explained with the variables being compared to each other. For example the data has shown that an entrepreneur either has many names or many references. Since this an 'either' and not 'and' case, the two groups differ. Which explains why the sum of these variables Sum of Persons, also shows little connection with both variables. The significant differences are found between group 2/ middle and 3/ high, and group 1/ low and 3/ high, and of with respectively 7.1% and 5.4% of the variance can be explained by Ref Person. These findings indicate that entrepreneurs that score low on persons referred to, score low on the confidence these entrepreneurs have in performing business related tasks. The relation is relatively linear which indicates that an increase in references also increases the confidence.

From the analysis of the variable Expect Progress in combination with Ref Persons it is found that group 1/ low and 2/ middle, and group 1/ low and 3/ high significantly differ from each other and respectively 7.5% and 7.4% of the variance is explained by Ref Persons. A positive relation is found. This means the higher amount of Ref Persons, the higher their Expected Progress. The difficulties with the variable Ref Person are already explained and are therefore not again discussed. If the expectation about the entrepreneurs with high Ref Person scores holds, it is an indicator for new research toward this group. The relation found between Ref Person and Expect Progress is probably best explained by defining the variable. Ref Person is thought to indicate External Orientation. This External Orientation is thought to stimulate opportunity recognition. Having many external contacts, which the variable Ref Person indicates, will provoke new opportunities and so the expectance of work and progress. The same can be said about the relation between Ref Person and Confident of Growth, with which relations are also found between group 1/ low and 2/ middle and group 1/ low and 3/ high. This similarity between Expect Progress and Confident of Growth is already discussed, and the compatible relationships are again found here. The variance between group 1/ low and 2/ middle is for 9.6% explained by Ref Persons and between group 1/ low and 3/ high, for 7.3% explained. This is also strengthened by the findings of the summation variable Average satisfaction.

The relation that is focused on now, is the relation between Ref Persons and Well Running Business. A significant difference is found between group 1/ low and 3/ high and is again found to be a negative meaning that a higher score with the independent variable, connects to a lower score with the dependent variable. Since the confidence level of a well running business is seen as a positive indicator of good entrepreneurial performance and it is thought that Ref person is also a good indicator of entrepreneurial performance. This creates a dilemma. Although it is already stated that Well Running Business is an anomaly. The cause may also lay with the variable Ref Person. As mentioned before it is thought that the entrepreneurs that mention Persons by name and the entrepreneurs that refer to Persons are different. Although these variables show a significant correlation, this is not a very strong correlation of .37 and the relations that are found to be significant with reference to Persons are not significant with Persons. The answer may lie in the way entrepreneurs think about their contacts and the amount of contact these entrepreneurs have. These differences may indicate why the theoretical framework is offset.

The fifth dependent variable that significantly differs from Ref Persons is Causation. The analysis shows that there is a significant difference between group 2/ middle and 3/ high, and between group 1/ low and 3/ high. The difference that is found is positive and 4.9% of the variance between group 2/ middle and 3/ high, and 10.5% of the variance between group 1/ low and 3/ high, is explained by Ref Persons. Group 2/ middle, is found to be more present on the lower groups of Causation and group 3/ high, more in the higher groups of Causation. This significant difference with Causation is also found with Effectuation, however, not as strong. There still is a significant difference between group 2/ middle and 3/ high, and group 1/ low and 3/ high, from which respectively 6.8% and 7.8% of variance can be explained.

While no definitive statement can be made about the relation between Causation or Effectuation with entrepreneurial performance, the relation between the *entrepreneurs* with Causation or Effectuation can be drawn from. In the article of Sarasvathy (2001) it is mentioned that the essential agent of entrepreneurship is an effectuator. This is substantiated by the fact that destinations are often unclear, especially for entrepreneurs in new markets or with new products/services *(Sarasvathy, 2001)*. What the findings of the Causation and Effectuation variables mean for this study is not clear. The significant positive correlation between Causation and Effectuation of .50 can explain the small variability between the variable Ref Person and Causation, and Ref Person and Effectuation. Since there is no distinct difference between these variables and no strong correlation it might explain why the implication of Sarasvathy (2001) in this case does not hold.

4.3.2 Sum of Persons

The resemblance the summation variables show with their individual predecessors is mentioned earlier. Therefore the relation Sum of Persons has with the dependent variables is only described briefly. The Sum of Persons is based on the amount of Persons mentioned by name plus the amount of Persons referred to. The relation Sum of Persons has with the dependent variables is best explained using the previous mentioned relation of Ref Person has with the dependent variables. Even though the relations of Sum of Persons with the dependent variables are not as strong and not as common when looking to the others variables like with Ref Persons, the overall resemblance is clear. Performing a correlation analyzes between Sum of Persons and Ref Persons indicates a very strong significant correlation of .72. It strengthens the resemblance assumption.

4.3.3 Sum External

Sum External is the summation of all externally orientated variables being: Persons, Ref Persons, and Locations. The strong influence of Ref person, which is also found with the Sum of Persons, is again demonstrated. A strong significant correlation of .68 is found with Ref Person and so the same description used in combination with Ref Persons holds. However, the relation between Sum External and Well Defined Business Model differs from earlier findings of Ref Person and Well Defined Business Model. The relation is found to be negative between group 1/ low and 2/ middle, in contrast to the finding between group 2/ middle and 3/ high, which is found to be positive. The variance that is explained between group 1/ low and 2/ middle, is 5.7% and between group 2/ middle and 3/ high, is 6.7%. Although the positive relation between group 2/ middle and 3/ high of Ref Persons can be explained better, these findings are not included in the overall conclusions.

4.3.4 Summary External Orientation

It can be stated that the amount of persons referred to, is a good indicator of entrepreneurial performance. The theoretical framework suggests the results which are found with Sum of Persons and Sum External. However, the theoretical framework does not predict the difference between Referring to persons and mentioning them by name. Since the relation appears to be positive and is coherent with Ref Persons it may be concluded that this is a better indicator for business performance. It seems of no importance that a person is mentioned by name in the planning. So, an increased amount of external contacts has a positive effect on entrepreneurial performance and this partially confirms the theoretical framework. The third hypothesis is, as mentioned before, twofold. The first part of this hypothesis is the positive influence of the External Orientation, since not all independent variables that belong to the External Orientation outside the VLT Program are found to significantly influence the Entrepreneurial success dimensions. Although the variables Ref Persons, Sum of Persons and Sum External all show significant relations with all Entrepreneurial success *dimensions*, they do not show these relations with all Entrepreneurial success *variables*. Due to the absence of these relations, the hypothesis is only partially supported. The second application of this hypothesis, concerning VLT dependency, is discussed in the next section.

H3: External Orientation positively influences Entrepreneurial success.

4.3.5 VLT Dependency

The grouping variable VLT dependency is part of the dimension External Orientation. The difference between these variables is explained by clarifying the difference in performance. The dependency on the VLT program is seen as a negative effect and having a high External Orientation is seen as a positive effect on performance. Not all VLT variables are found to have a significant relation with the dependent variables, only VLT coach, and the summation variable Sum VLT is described in this section.

4.3.6 VLT Coach

The variable VLT coach is an indicator of the references the entrepreneurs make toward their personal coach. Interestingly the relation between the variable VLT coach, Defined Business Model and Defined Business Idea are also represented in the job description of the VLT coach, and in accordance to this connection, allowed to influence each other. The coach is expected to help in creating a business plan. Therefore, in this case the results are not a good indicator of good entrepreneurial performance but seem to be an indicator of good coaching. The higher sense of responsibility towards the coach apparently influences the capacity to formulate a business model and form a business idea which may eventually lead to higher entrepreneurial performance. Between group 2/ middle and 3/ high, of VLT coach a significant difference is found when comparing this to Defined Business Idea. This relation could for 7% be explained by the variable VLT coach. The relation found between group 1 and 3, low and high, of VLT coach in comparison to Defined Business Model is for 5.3% explained by VLT coach. These findings contradict the theoretical framework.

Before confirming the statement that referring to the VLT coach increases Entrepreneurial success, it is found that the relation between VLT coach and Start-up Activities is negative between group 1/ low and 2/ middle, and between group 1/ low and 3/ high, of VLT coach. The difference between these groups could for respectively, 4.6% and 15.7%, be explained by the VLT coach variable. This indicates that when entrepreneurs often refer to their coach, they are more likely to have a negative influence on the amount of start up activities undertaken. This confirms the expectation described in the theoretical framework that mentioning the coach more often is a sign of a false sense of responsibility and distracts the focus of the entrepreneur from the start up activities and toward the VLT program. This conclusion is strengthened by finding the same result with the summation variable Sum VLT.

4.3.7 Sum VLT

The summation Sum VLT is created from three variables, VLT coach, VLT board, and VLT reference. This summation confirms the results found with VLT coach. However, it is odd that the variable VLT reference does not appear to have significant relations with the same dependent variables as VLT coach and Sum VLT. The variables VLT coach and VLT reference have a significant correlation with each other of .54, which indicates an apparent connection. The correlation of VLT coach and VLT references with Sum VLT is also significant and higher as .80, which is very strong. These correlation analyzes explain the difference found between VLT coach and VLT reference and also explains the strong resemblance between VLT coach and Sum VLT, since the correlation between VLT coach and VLT references is not as strong as between VLT coach and Sum VLT. The variables VLT coach and Sum VLT show a very strong resemblance and therefore the same relation description that is used for VLT coach is used to describe the relations between Sum VLT and the dependent variables. Significant differences found between the independent variable Sum VLT and the dependent variables Defined Business Model and Defined Business Idea. The differences between these variables are positive. The significant differences that are found between Sum VLT and Start up activities on the other hand are negative, which is also the case with VLT coach.

4.3.8 Summary VLT Dependency

It can be stated that the false sense of responsibility influences the Entrepreneurial success. The focus of a VLT coach lays on creating a business model and idea in contrast to start up activities. Therefore entrepreneur that have a sense of responsibility towards these coaches may also focus on defining a business model and idea instead of undertaking start up activities. The third hypothesis is discussed in the previous section, however, the twofold nature depicts that External Orientation is also seen as VLT dependency. Only a selection of VLT dependency variables is found to have a significant influence on only one Entrepreneurial success dimension. The support for the second purpose of the hypothesis is therefore not found to be sufficient. Which indicate that this part of the third hypothesis is rejected.

H3: External Orientation positively influences Entrepreneurial success.

The twofold use of this hypothesis, makes it difficult to give a clear response in whether the hypothesis is supported or not. Partial confirmation is found with External Orientation, outside the VLT program. Although this cannot be said about the VLT dependency in the External Orientation. The two implications are therefore kept separate.

4.4 Control Variables

This section discusses the influence of the control variables in combination with the findings. The control variables are used to confirm if the relations that are found between the independent and dependent variables are not influenced by other variables. The variables that are thought to influence these relations, and could be tested, are Gender and the Specific Coach. Gender does not appear to have any significant correlation with the dependent variables and shows no relation according to the Kruskal-Wallis test. This is not the case for Specific Coach, although there are many missing values, the specific coach is not found to be significant correlated with most dependent variable except for Well Running Business, with which a correlation of .29 is found. This influences the validity of the relations that are found with this already difficult to explain variable.

5 Conclusion and Discussion

This chapter will, aside from the conclusion and discussion, elaborate on: the scientific and practical implication, the limitations, and give advice for future research. The first paragraph starts with an overview of the three hypotheses. This overview is used as a guideline to organize the chapter.

5.1 Conclusion

This section will explain the hypotheses according the table 9 below. As previously mentioned the third variable concerning External Orientation is twofold. The first part, H3a, focuses on the influence outside of the VLT program. The second part, H3b, is focused on the influence of internal factors of the VLT program on Entrepreneurial success.

Hypotheses	Hypotheses Description	Confirmed
H1	Planning Progress positively influences Entrepreneurial success	Not
H2	Planning Precision positively influences Entrepreneurial success	Partially
H3a	External Orientation (external to VLT program) positively influences Entrepreneurial success	Partially
H3b	External Orientation (not having VLT dependency) positively influences Entrepreneurial success	Not

Table 9: Planning dimension hypotheses support

The dimension Planning Progress is based on two variables, Subjects and Repetition. Both variables found significant correlations with the performance indicators, however, not with all. According to the theoretical framework planning tasks simultaneous, will positively influence Entrepreneurial success. This relation is only found within the Confidence dimension of the dependent variables. This indicates that Planning Progress cannot explain the relation with entrepreneurial performance. The relation between Subjects and Expect Progress, Confident of Growth and the summation variable Average Satisfaction is interesting and indicates that entrepreneurs that have more tasks planned expect a return of these plans. However, these relation are only a small part of entrepreneurial performance and not substantial enough to confirm hypothesis 1, therefore hypothesis 1 is rejected.

With the dimension Planning Precision more significant relations are found. Precision is measured using two variables, Concreteness and Characters. Both independent variables found most relations with the Business phase variables that are part of the Progress dimension. The relation between Precision in Planning and Business phase may indicate that entrepreneurs that are very concrete and elaborate also have a clear picture of their business and so, have a better definition of their business. Concreteness is found to reflect to the confidence an entrepreneur has in performing certain business related tasks, and the progress that is expected. Expect Progress is found to have a significant relation with Characters. However, being very concrete may be the key aspect of Planning Precision and be a characteristic of successful entrepreneurs. Concreteness is also found to have a relation with Causation and the summation variable Average Satisfaction. It is found that especially Concreteness shows significant relations with all Performance indicator *dimensions* however, not with all individual *variables*. Finding these significant relations only with the, overarching, dimensions results in hypothesis 2 only partially being confirmed.

Variables of the External Orientation dimension show significant relations with all the Performance indicator dimensions. In contrast to Planning Precision where most relations are found in the Progress dimension, most relations are found with the Confidence dimension. It is expected that the External Orientation of entrepreneurs would influence the networking and the opportunity recognition. External Orientation may relate to the general confidence an entrepreneur has. Being confident possibly enables the entrepreneur to contact more external contacts and become confident in performing business related

tasks, expecting progress and be confident of growth. It is also reassuring to find relations with Causation and Effectuation. Scoring high on these variables indicates a higher performance. However, not all External Orientation *variables* are found to have a significant strong relations with the performance indicators. However, the External Orientation variables that are aimed outside of the VLT program do find support with the, overarching, performance indicator *dimensions*. Therefore the third hypothesis is only partially confirmed.

The relations found in the VLT dependency group are harder to interpret. Positive relations are found between the VLT variables and Well defining a business model and idea, and negative relations are found in combination with the start-up activities. The negative relations confirm the theoretical framework, a higher sense of responsibility toward the VLT program negatively influences the entrepreneurial performance. The positive relations with Well Defining Business Model and Idea contradicts this. It should be mentioned that the relation between the VLT variables and Business Model is significant on a $p<.05$ level and VLT variables with Start-up activities are significant on a $p<.01$ level. The Coach is expected to help the entrepreneur in creating the Business Model and in developing a business idea, confirming the expectations and clarifying this relation. However, it is expected that the VLT dependency negatively influences the Entrepreneurial success, a low VLT dependency is needed to increase External Orientation and so influence Entrepreneurial success. Although the positive and negative relations are explained, the lack of support by the other performance indicators, has a result that there is not enough support for this hypothesis. VLT dependency is not found to influence Entrepreneurial success.

The twofold meaning of the third hypothesis indicates that External Orientation outside the VLT program is partially supported and not enough evidence is found to support the influence of VLT dependency on Entrepreneurial success.

5.2 Discussion

This chapter discusses the reliability of the relations found. The data that is received, and on which the research is based, is bias. The performance indicator are filled in by the entrepreneurs themselves. The independent variables that are obtained via the VLT diaries, are interpreted and quantified by one person, making the reproducibility and reliability questionable. These limitations are anticipated however, the missing performance indicators are not. Due to a large number of missing values it is not possible to investigate all the preset relations. The relations found with the dimension External Orientation are also curious, finding significant relations between Ref Persons and the dependent variables without finding these relations with Persons, is interesting.

Apart from these findings, the findings connected to VLT dependency are also worth mentioning. The variables VLT board and VLT references are found to have no significant relation with the performance indicators. The variable VLT board can easily be explained by looking at the data, almost no mentioning of the VLT board are found. However, this cannot be said of VLT reference. The difference between the direct link with the program being, the VLT coach, and the indirect link being, referring to the VLT program, is interesting. This difference indicates a gap in the theoretical framework. The findings concerning the positive and negative relations of VLT coach indicate a difficulty. When explaining this by using the job description of the VLT coach, it devalues the performance indicator. There are apparently exceptions for this performance indicator. This in turn devalues other findings that are deducted from this performance indicator.

The absence of unity in the relations between the independent and dependent variables also devalues this research. The performance indicator are expected to all be higher with high rated entrepreneurs. Therefore it is expected that an indicator for Entrepreneurial success results in an increase with all

dependent variables. This absence of unity may implicate an incorrect use of variables. Although the correlation between all dependent variables suggests otherwise and confirms the coherence. These dependent variables in itself are also a point of discussion, since no consensus is found in the literature about performance indicator, the chosen indicators may not indicate the desired Entrepreneurial success.

5.3 Practical Implication

The following section concerns the practical implication the hypotheses and the individual results have in practice. The subsequent section concerns the implications these findings have for science.

For the incubator program the variables, Concreteness, Characters, and Ref Person can probably be used as indicators for Entrepreneurial success but other findings indicate a dilemma. The dilemma concerns the VLT dependency implications, although not strongly supported, these findings imply there should be a balance in the tasks the Coach performs. When coaches emphasize making progress, the influence on the entrepreneur is twofold. By letting the entrepreneur feel responsible toward the VLT coach, it helps in defining a business model, which is good, but it might also lead to a reduction of the entrepreneurial performance in other dimensions. Finding a balance may be key for incubator effectiveness. To use these variables as a performance indicator for entrepreneurs may prove difficult. Entrepreneurs are not likely to track their every week planning without stimulus. Making it difficult to generalize these findings, however, there is no indication that in different incubator programs different results would be found.

5.4 Scientific Implications

Even though no hypotheses can be fully supported and the practical implication are not extensive, the implications for research in this field are also not extensive. Finding support for most independent variables may indicate that the theory behind these variables is sound but the implementation of the dimensions and measurability is incorrect. A total of 13 independent variables are tested, nine indicated a significant relations with the performance indicators, two had to few measurements to be included, and two are not found to have a significant relation with the performance indicators. When looking at these results, even when not conclusive, in general they support the theory.

5.5 Limitations

The following section concerns the limitations of this research. Only two control variables are tested which limits the total reliability of the research. The influence of entrepreneurial experience, and education are for example not tested. If the results are found in every industry, and in every business stage, is also not tested. Beside these control variables it is also not investigated if there is a loss of motivation during the data collection. This could lead to a simplification or shortening of the planning described and influence multiple variables. However, if this is the case for all entrepreneur there is still a difference between high rated and low rated entrepreneurs. The data collection in itself is also spurious, the entrepreneurs are obligated to fill in the Weekly Diaries and the End Evaluation Form which may influence the findings.

5.6 Future Research

Throughout this Conclusion & Discussion chapter the limitations of this research are mentioned but these limitations also create opportunities for future research. Verifying the desired control variables opens up new research possibilities. These findings may infer strengthening in certain situations or in certain industries. In theory it is for example found that if the complexity of planning increases (more sophisticated) in a successful small high tech company as the firm grows. This indicates a development of planning, and so of the Planning dimensions. The same can be said in accordance to the findings of Greve (2003) who found that entrepreneurs are more externally focussed when *starting* a company. This development implies that organizational phase influences the scanning activities and so organizational success. The effects these variables have on the relations between the Planning dimension and Entrepreneurial success is unclear and should be tested. Therefore the influence of the industry an entrepreneur is active should be tested.

The difficulties with the current performance indicators are explained, missing values, and missing dimensions. Performing this research with new performance indicator, which are for example aimed at long term financial performance, possibly create new and/or confirming results. This gives insights in how the direct, Coach, and indirect, References, links are related to sense of responsibility felt toward the VLT program and Entrepreneurial success. Another interesting subject for future research is to find the difference between mentioning persons by name and referring to persons by other means, since no logical explanation is given.

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7 Appendix

7.1 Appendix 1: Weekly Diary

The purpose of this diary is to keep track of the progress, questions, and plans you have concerning your business and personal development and to communicate these with your coach. Also, it is meant to evaluate the trainings you have followed.

In order to structure your coach meetings, we ask you to fill out the following questions at the end of each week. After submitting this form, you and your coach can see the content of this form at My VNT, past diaries.

Learnings

What were the most important things that you learned in the past week?

Please describe each learning in a couple of sentences and indicate what triggered this learning (e.g., a specific part of a VentureLab training, a meeting with a particular person, a show that you saw on television, etc.)

Results

What results have you made in the past week?

Please describe each result in a couple of sentences. Examples could be: a specific change in your business idea, a contract with a first customer, finishing a market study, receiving funding, etc.

Issues

What issues have you been most concerned with in the past week?

Please summarize each issue in a couple of sentences and explain why it is important. Examples could be: How to find a supplier for a specific component, where to find funding for the next step, whom to ask for advice on a specific question, etc.

Next steps

What are the next steps that you are going to take in the coming weeks?

Please describe each step in a couple of sentences and why it is important. Examples could be: calling a number of potential suppliers, reading reports on a particular industry, brainstorming with a VLT colleague, etc.

7.2 Appendix 2: End Evaluation Form

7.2.1 When you started in VentureLab, we asked you about your capabilities. At this moment we ask you this question again. To what extent are you confident that you can perform the following tasks successfully?

	Not at all confident 1	2	3	4	Very confident 5
01. See new market opportunities for new products/services	0	0	0	0	0
02. Discover new ways to improve existing products/services	0	0	0	0	0
03. Identify new areas for potential growth	0	0	0	0	0
04. Design product/services that solve current problems 0	0	0	0	0	
05. Create product/services that fulfil unmet customer needs	0	0	0	0	0
06. Bring a product concept to a market in a timely manner	0	0	0	0	0
07. Be able to obtain sufficient funds for future growth	0	0	0	0	0
08. Develop and maintain favourable relationships with potential investors	0	0	0	0	0
09. Develop relationships with key people who are connected to capital sources	0	0	0	0	0
10. Identify potential sources of funding for investments	0	0	0	0	0
11. Work productively under continuous stress, pressure and conflict	0	0	0	0	0
12. Tolerate unexpected changes in business conditions	0	0	0	0	0
13. Persist in the face of adversity	0	0	0	0	0
14. Take calculated risks	0	0	0	0	0
15. Make decisions under uncertainty and risk	0	0	0	0	0
16. Manage expenses	0	0	0	0	0
17. Control business costs	0	0	0	0	0
18. Manage cash flows	0	0	0	0	0

7.2.3 To find out in which phase your business is currently in, please indicate to what extent you agree or disagree with the following statements.

01.	There is a well-defined business idea	strongly disagree	0	0	0	0	0 strongly agree
02.	There is a well-defined business model	strongly disagree	0	0	0	0	0 strongly agree
03.	There is a well-defined business plan	strongly disagree	0	0	0	0	0 strongly agree
04.	There is a well-running business	strongly disagree	0	0	0	0	0 strongly agree

7.2.4 If you made sales in the past 4 months, how much was this? Please specify per month.

	Month (name of month)	Sales (in Euro)
01.	.....	.....
02.	.....	.....
03.	.....	.....
04.	.....	.....

7.2.5 How many persons in full time equivalents and how many persons are working in your company at this moment? (including yourself)

FTEs (Full time equivalents) …… Persons …….

7.2.5a What is the average salary that you pay to your employees? (Net amount that employees receive, including bonuses and special benefits, also including your own salary from profits).

An average of ……. Euro/month per employee.

7.2.6 When you started in VentureLab, we asked you which business start-up activities you have been involved in before. Since you probably have performed additional activities now, we ask you this question again. Please indicate which of the following activities you have ever done before. Please make a response in each row. Note: this question does not refer only to the past four months, but to any time until today.

	Yes	No
01. Spent a lot of time thinking about starting a business	.....	.....
02. Took classes or workshops on starting a business	.....	.....
03. Saved money to invest in a business	.....	.....
04. Invested own money in a business	.....	.....
05. Developed a prototype, model or procedures for the product/service	.....	.....
06. Defined market opportunities	.....	.....
07. Purchased raw materials, inventory, or supplies	.....	.....
08. Prepared a business plan	.....	.....
09. Organized a start-up team	.....	.....
10. Purchased or leased major items like equipment, facilities or property	.....	.....
11. Started marketing or promotional activities	.....	.....
12. Arranged child care or household help to allow time for business	.....	.....
13. Established credit from a supplier	.....	.....
14. Filed income tax return	.....	.....
15. Devoted full time to business	.....	.....
16. Applied for a patent, copyright, or trademark	.....	.....
17. Developed projected financial statements	.....	.....
18. Opened a bank account exclusively for a business	.....	.....
19. Received money, income, or fees from sale of products or services	.....	.....
20. Asked financial institutions or people for funds	.....	.....
21. Received funds from financial institutions or people	.....	.....
22. Hired employees or managers	.....	.....
23. Paid income taxes for income generated through a business	.....	.....
24. Realized monthly revenues that exceeded monthly expenses	.....	.....
25. Had a separate phone listing for a business	.....	.....
26. Had a separate phone line for a business	.....	.....
27. Had a website exclusively devoted to a business	.....	.....
28. Registered a business officially	.....	.....

7.2.7 How much have you invested in your company so far? Please indicate the total amount and number of financers for each type of financing in the table below.

Type of financing	Total amount (in Euro)	Number of financers
Personal savings:	€	.....
Family and friends:	€	.....
Bank credit:	€	.....
TOP loan:	€	.....
Business Angel:	€	.....
Venture Capital:	€	.....
Profits returned in company:	€	.....
Other: namely	€	.....

7.2.8 Consider how you have worked the last year and indicate the degree to which you agree or disagree with each of the following statements. In case you are on your own, you can substitute 'We' with 'I'.

	Strongly disagree 1	2	3	4	Strongly agree 5
01. We analyzed long run opportunities and selected what we thought would provide the best returns.	0	0	0	0	0
02. We developed a strategy to best take advantage of resources and capabilities.	0	0	0	0	0
03. We designed and planned business strategies.	0	0	0	0	0
04. We organized and implemented control processes to make sure we met objectives.	0	0	0	0	0
05. We researched and selected target markets and did meaningful competitive analysis.	0	0	0	0	0
06. We had a clear and consistent vision for where we wanted to end up.	0	0	0	0	0
07. We designed and planned production and marketing efforts.	0	0	0	0	0
08. We experimented with different products and/or business models.	0	0	0	0	0
09. The product/service that we now provide is essentially the same as originally conceptualized.	0	0	0	0	0
10. The product/service that we now provide is substantially different than we first imagined.	0	0	0	0	0
11. We tried a number of different approaches until we found a business model that worked.	0	0	0	0	0
12. We were careful not to commit more resources than we could afford to lose.	0	0	0	0	0
13. We were careful not to risk more money than we were willing to lose with our initial idea.	0	0	0	0	0
14. We were careful not to risk so much money that the company would be in real trouble financially if things didn't work out.	0	0	0	0	0
15. We allowed the business to evolve as opportunities emerged.	0	0	0	0	0
16. We adapted what we were doing to the resources we had.	0	0	0	0	0
17. We were flexible and took advantage of opportunities as they arose.	0	0	0	0	0
18. We avoided courses of action that restricted our flexibility and adaptability.	0	0	0	0	0
19. We used a substantial number of agreements with customers, suppliers and other organizations and people to reduce the amount of uncertainty.	0	0	0	0	0
20. We used pre-commitments from customers and suppliers as often as possible.	0	0	0	0	0

7.2.9 Please indicate the extent to which you agree or disagree with the following statements:

	Strongly disagree				Strongly agree
	1	2	3	4	5
01. I am satisfied about the progress I made in the last four months	0	0	0	0	0
02. I expect much progress in the next four months	0	0	0	0	0
03. I am confident to realize a growth company	0	0	0	0	0