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Entrepreneurial processes in different cultures

A comparative study of entrepreneurial processes in the Netherlands and Australia

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Summary

This report sets out to investigate the following research question: Does national culture influence the entrepreneurial processes used by entrepreneurs? To answer this main research question a comparative study of student-entrepreneurs in the Netherlands and Australia will be done.

The two entrepreneurial processes that are identified in literature are effectuation and causation. Sarasvathy (2001) identifies five elements of both entrepreneurial processes: (1) beginning with a given goal (causation) or a set of given means (effectuation); (2) focusing on expected returns (causation) or affordable loss (effectuation); (3) emphasizing competitive analysis (causation) or strategic alliances and precommitments (effectuation); (4) exploiting preexisting knowledge (causation) or leveraging environmental contingencies (effectuation); and (5) trying to predict a risky future (causation) or seeking to control an unpredictable future (effectuation).

National culture is described as 'a shared set of basic assumptions and values, with resultant behavioral norms, attitudes and beliefs which manifest themselves in systems and institutions as well as behavioral patterns and non-behavioral items.' (Dahl n.y.p.) Hofstede (2001) identified 5 cultural dimensions, this study uses the dimension 'masculinity' (MAS), which refers to the distribution of emotional roles between the genders.

In low-MAS societies there is a focus on a given set of means and there are higher levels of self-esteem. This leads to hypothesis 1: *Entrepreneurs in the low-MAS society of the Netherlands will rely much more on the effectual element 'a given set of means' than entrepreneurs in the high-MAS society of Australia.* In high-MAS societies there is a very strong sense of competition and a focus on decisiveness and clarity. This leads to hypothesis 2: *Entrepreneurs in the high-MAS society of Australia will rely much more on competitive analysis and the analysis of data than entrepreneurs in the low-MAS society of the Netherlands.* A strong focus on alliances and relationships was identified in low-MAS societies, this leads to hypothesis 3: *Entrepreneurs in the low-MAS society of the Netherlands will rely much more on alliances or partnerships than entrepreneurs in the high-MAS society of Australia.* To test the overall relationship between the two constructs 'entrepreneurial processes' and 'culture', hypothesis 4 states: *Entrepreneurs in the low-MAS society of the Netherlands will rely much more on effectuation reasoning when creating a new venture than entrepreneurs in the high-MAS society of Australia.*

20 student-entrepreneurs in Australia and 20 student-entrepreneurs in the Netherlands were asked to go through a case study consisting of 10 decision problems about creating a new venture, whilst talking out loud. The sessions were recorded, transcribed and coded. The dependent variables were

the percentages of specific element usage or overall percentage of effectual reasoning. The independent variable used were the country scores on the Masculinity Index. The results were controlled for gender, age and on a Chandler scale.

The study found that Dutch entrepreneurs do not rely more on ‘use of a given set of means’ than their Australian counterparts, hypothesis 1 is not supported. Australian entrepreneurs do rely more on competitive analysis and emphasize the analysis of data more than Dutch entrepreneurs, hypothesis 2 was supported. Dutch entrepreneurs did not rely more on alliances or partnerships than Australian entrepreneurs, hypothesis 3 is not supported. In general, Dutch entrepreneurs do use effectual reasoning more than their Australian counterparts, hypothesis 4 was supported. An analysis of this relation per problem area revealed that this relation is statistically significant for 5 out of 10 problem areas. The control variables ‘age’ and ‘gender’ did not have a significant impact on the results. It was discovered however that subjects tend to use effectual reasoning more in their own businesses than in they did in the case study.

The results found in this report suggest that national culture has an influence on the entrepreneurial processes used by entrepreneurs. The findings imply that the direction of the relation is that the lower a country scores on the Masculinity Index, the more its entrepreneurs use effectual reasoning when starting up a new venture. The implications of these results are that the way business schools arrange their curriculum could differ according to the score of their country on the Masculinity Index. It also alters the way entrepreneurs conduct their business, they can adapt to the entrepreneurial process used most in that society. Another implication is that the findings in this report suggest that national culture does not influence all elements of effectual and causal reasoning, this could change the way researchers conduct their research.

Samenvatting

In dit verslag wordt de volgende onderzoeksvraag behandeld: Is nationale cultuur van invloed op de ondernemingsprocessen die gebruikt worden door ondernemers? Om deze vraag te beantwoorden zal er een vergelijkend onderzoek naar studentondernemers in Nederland en Australië uitgevoerd worden.

De twee ondernemingsprocessen die geïdentificeerd worden in de literatuur zijn 'effectuation' (E) en 'causation' (C). Sarasvathy (2002) identificeert vijf elementen van beide ondernemingsprocessen: (1) beginnen met een gegeven doel (E) of met een set van middelen (E); (2) richten op verwachte inkomsten (C) of aanvaardbaar verlies (E); (3) competitieve analyse benadrukken (C) of strategische allianties benadrukken (E); (4) bestaande kennis exploiteren (C) of onvoorziene omstandigheden in de omgeving gebruiken (E); en (5) een onzekere toekomst proberen te voorspellen (C) of een onvoorspelbare toekomst proberen te beheersen (E).

Nationale cultuur is beschreven als een gedeelde set van basis aannames en waardes, met daaruitvolgende normen, gedragingen en geloven die zichzelf zowel manifesteren in systemen en instituties als in gedragspatronen en niet-gedragsmatige zaken (vrij vertaald naar Dahl n.y.p). Hofstede (2001) heeft 5 culturele dimensies geïdentificeerd, dit onderzoek gebruikt de dimensie 'masculinity' (MAS), wat de verdeling van emotionele rollen tussen de geslachten beschrijft.

In een maatschappij met een laag MAS-niveau bestaat een nadruk op een gegeven set van middelen en zijn de niveaus van zelfvertrouwen hoger. Dit leidt tot de eerste hypothese: *Ondernemers in de laag-MAS maatschappij van Nederland zullen veel meer vertrouwen op het element van 'effectuation': een gegeven set middelen, dan ondernemers in de hoog-MAS maatschappij van Australië.* In hoog-MAS maatschappijen bestaat er een sterke nadruk op competitie en wordt er gericht op beslistheid en duidelijkheid. Dit leidt tot de tweede hypothese: *Ondernemers in de hoog-MAS maatschappij van Australië zullen veel meer op competitieve analyse en de analyse van data vertrouwen dan ondernemers in de laag-MAS maatschappij van Nederland.* Een sterke nadruk op allianties en relaties is geïdentificeerd in laag-MAS maatschappijen, dit leidt tot hypothese 3: *Ondernemers in de laag-MAS maatschappij van Nederland zullen veel meer vertrouwen op allianties en partners dan ondernemers in de hoog-MAS maatschappij van Australië.* Om de algemene relatie tussen de begrippen 'ondernemingsprocessen' en 'cultuur' te testen, stelt hypothese 4: *Ondernemers in de laag-MAS maatschappij van Nederland zullen veel meer vertrouwen op 'effectuation' redeneringen tijdens het opzetten van een nieuw bedrijf dan ondernemers in de hoog-MAS maatschappij van Australië.*

20 studentondernemers in Australië en 20 studentondernemers in Nederland zijn gevraagd om een case studie door te werken die uit 10 problemen bestond over het opzetten van een nieuw bedrijf. Ze zijn gevraagd hardop te praten terwijl ze de case doorliepen en deze sessies zijn opgenomen, op papier gezet en gecodeerd. De afhankelijke variabelen in dit onderzoek waren de gebruikspercentages van specifieke elementen of algemene 'effectuation' redeneringen. De onafhankelijke variabele was de score van de twee landen op de Masculinity index. De resultaten zijn op geslacht, leeftijd en op een Chandler schaal gecontroleerd.

Het onderzoek liet zien dat Nederlandse ondernemers niet meer op het gebruik van een gegeven set middelen vertrouwen dan Australische ondernemers, hypothese 1 is niet ondersteund. Australische ondernemers vertrouwen wel meer op competitieve analyse en leggen meer de nadruk op de analyse van data dan hun Nederlandse tegenhangers, hypothese 2 is ondersteund. Nederlandse ondernemers vertrouwen niet meer op het gebruik van allianties en partners dan Australische ondernemers, hypothese 3 is niet ondersteund. In het algemeen gebruiken Nederlandse ondernemers 'effectuation' redeneringen wel meer dan hun Australische tegenhangers, hypothese 4 is ondersteund. Een analyse van deze relatie per probleem onthulde dat deze algemene relatie voor 5 van de 10 probleemgebieden statistisch significant is. De controle variabelen 'leeftijd' en 'geslacht' hadden geen significante invloed op de resultaten, maar er werd wel ontdekt dat de onderzochte ondernemers in hun eigen bedrijven meer 'effectuation' redeneringen gebruiken dan in de case.

De resultaten die in dit onderzoek gevonden zijn impliceren dat nationale cultuur wel degelijk invloed heeft op de ondernemingsprocessen die gebruikt worden door ondernemers. De resultaten impliceren dat de richting van de relatie is dat hoe lager een land scoort op de Masculinity Index, hoe meer de ondernemers in dat land gebruik maken van 'effectuation' redenaties bij het opzetten van een nieuw bedrijf. De implicaties van deze resultaten zijn dat de manier waarop management opleidingen hun vakkenpakket inrichten per land kan verschillen, afhankelijk van de score van dat land op de Masculinity Index. Ook verandert het de manier waarop ondernemers zaken doen, ze kunnen zich aanpassen aan de ondernemingsprocessen die het meest gebruikt worden in die maatschappij. Een andere implicatie is dat de resultaten van het onderzoek aangeeft dat nationale cultuur niet alle elementen van de twee ondernemingsprocessen beïnvloedt. Dit kan de manier waarop wetenschappers hun onderzoek uitvoeren beïnvloeden.

1. Introduction

In the current economy Small and Medium Enterprises are often called the backbone of the economy (Erixon 2009). At the heart of most of these enterprises is usually an entrepreneur. Someone who made something out of nothing. There have always been questions about these entrepreneurs, for example what does an entrepreneur have to do to become successful? Or what type of person does an entrepreneur have to be? Traditionally entrepreneurship has been studied as either a set of circumstances or attributes of the project and its environment, or as a set of personality traits to explain either the failure or the success of new ventures (Sarasvathy 2008). According to Perry, Chandler et al. (2011), most of the research on entrepreneurship has been focused on rational decision-making models. Because of this, in many business schools a decision model in entrepreneurship that is taught is a goal-driven, deliberate model of decision making (Perry, Chandler et al. 2011). However, another way of looking at entrepreneurship has risen recently: Sarasvathy (2008) takes the angle of expertise in explaining and understanding characteristics or qualities that successful experts share within a given domain.

In her article in 2001, Sarasvathy has defined the before-mentioned goal-driven, deliberate model of decision making as a causation model. She then introduces a novel concept that opposes this model: an effectuation model. Sarasvathy (2001) describes this as a decision making model that 'takes a set of means as given and focuses on selecting between possible effects that can be created with that set of means' (Sarasvathy 2001, p.245). She describes five behavioral principles that relate to effectuation and causation: (1) beginning with a given goal (causation) or a set of given means (effectuation); (2) focusing on expected returns (causation) or affordable loss (effectuation); (3) emphasizing competitive analysis (causation) or strategic alliances and precommitments (effectuation); (4) exploiting preexisting knowledge (causation) or leveraging environmental contingencies (effectuation); and (5) trying to predict a risky future (causation) or seeking to control an unpredictable future (effectuation) (Sarasvathy 2001). Sarasvathy (2001) argues that effectual reasoning is also used by entrepreneurs when they follow up on entrepreneurial opportunities. The causation-based models of entrepreneurship are questioned by the introduction of the construct 'effectuation' (Perry, Chandler et al. 2011), which could result in a shift of focus in research on entrepreneurship, away from opportunity discovery (Read, Song et al. 2009).

The introduction of the novel concept of 'effectuation' however, has not led to a fair amount of empirical studies on the modeling and testing of the concept (for a full summary of the effectuation literature see (Perry, Chandler et al. 2011). The empirical studies that were undertaken did find positive relationships; Read, Song et al. (2009) for example have found empirical support for a

positive relationship between an effectual approach to strategy making and new venture performance. Because the concept of effectuation can lead to a paradigmatic shift in research and literature and the number of studies that have shown how important the concept is, Perry, Chandler et al. (2011) wish to encourage effectuation research. One of their recommendations is that in order to move effectuation research into an intermediate state, relationships between effectuation and established constructs should be explored. This study follows their advice and examines the relationship between effectuation and culture. Culture is chosen here because it studies entrepreneurship at the level of society, but it also acknowledges the individual and the external environment that cannot be controlled by the individual or the firm is incorporated in it (Lee and Peterson 2000). National culture is part of the set of three means that entrepreneurs start with, that are identified by Sarasvathy (2001): who they are, what they know, whom they know. An important part of 'who you are' is national culture, because an individual's personality and behavior are connected with their national culture (Berger 1991). The influence of culture on entrepreneurship was predicted by Berger (1991) where culture gives rise to entrepreneurial potential: 'It is culture that serves as the conductor, and the entrepreneur as the catalyst' (Berger 1991, p. 122). This leads to the aim of this study, which is to examine the relationship between the national culture of a society and the entrepreneurial processes that the members of such a society use in creating a new venture. The main research question addressed in this report is:

1. *Does national culture influence the entrepreneurial processes used by entrepreneurs?*

I will divide this main research question into two sub-questions:

a. What are the entrepreneurial processes used by entrepreneurs?
b. How is national culture identified?

To answer this question, data will be gathered on entrepreneurial processes in two countries: Australia and the Netherlands. Student-entrepreneurs in both countries will participate in think-aloud sessions in which they will go through a case study about the creation of a fictional coffee company: Coffee Inc.

For reasons that will be explained in the next chapter, of the many cultural dimensions that have been identified (for a full overview see (Dahl n.y.p.) this study focuses on the dimensions of Geert Hofstede (2001). He identified five cultural dimensions: power distance, uncertainty avoidance, individualism, masculinity and long-term orientation. I will choose one of these dimensions through a review of the theory on them and focus on the influence of that dimension.

The remainder of this report is organized as follows. First I review the relevant theory on effectuation and culture to answer the two sub-questions. From this review I derive several hypotheses. Then I describe my research method and test my hypotheses. I conclude with implications for theory and practice, and provide suggestions for further research.

2. Theory and hypotheses

2.1 Definitions of Effectuation and Causation

To be able to discuss the different sides of the effectuation debate, I will first define the two entrepreneurial processes that are involved in this debate: effectuation and causation. Sarasvathy introduced the concept of effectuation in 2001. The entrepreneurial process was named 'effectual' because it starts with means and causes and moves outwards towards new effects and unanticipated ends (Dew, Read et al. 2009). Sarasvathy (2001) forms the following definition of effectuation: '*Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means'* (Sarasvathy 2001, p. 245). She states that effectual reasoning is based on the premise: 'To the extent that we can control the future, we do not need to predict it.' (Sarasvathy 2001, p. 252) A person using effectual logic will begin with a set of given means, focus on affordable loss, emphasize strategic alliances and precommitments, leverage environmental contingencies and seek to control an unpredictable future (Sarasvathy 2008). Wiltbank, Dew et al. (2006) state that when a decision problem is effectually framed, it is about changing the problem space and create new opportunities out of existing realities. Chandler, DeTienne et al. (2011) apply the effectuation approach to new venture creation, and come to the conclusion that effectual entrepreneurs set out with the general idea to start a new venture, but during the decision process and after they see the outcomes of decisions, they use new insights to change the direction the business is heading. Because of the unpredictability of the future, effectual entrepreneurs might try a lot of different approaches before they settle on one business model (Chandler, DeTienne et al. 2011).

Sarasvathy (2001) contrasts effectuation to causation, and forms the following definition: '*Causation processes take a particular effect as given and focus on selecting between means to create that effect.'* (Sarasvathy 2001, p. 245) She states that causal reasoning is based on the premise: 'To the extent that we can predict the future, we can control it.' (Sarasvathy 2001, p. 252) A person using causal logic will begin with a given goal, focus on expected returns, emphasize competitive analysis, exploit preexisting knowledge and try to predict an uncertain future (Sarasvathy 2001). Wiltbank, Dew et al. (2006) state that when a decision problem is framed causally, existing opportunities are

discovered and exploited within a given problem space. When applying the causal approach when starting a new venture, there is a vision of the venture from the start and the entrepreneur puts all his efforts into achieving the state that he has in mind (Chandler, DeTienne et al. 2011).

2.2 Opposite Constructs or Orthogonal Constructs?

Even though Sarasvathy (2001) contrasted effectuation to causation, there is a general consensus that this does not make them the opposite ends of a continuum, companies seem to be able to use both to a large extent (Harms n.y.p.). Both effectuation and causation have the same generalized end goal or aspiration and Sarasvathy (2001) identifies them as integral parts of human reasoning that can occur simultaneously, overlapping and intertwining over different contexts of decisions and actions. Perry, Dew et al. (2011) examined the sub-contracts of effectuation and causation, and found nothing that indicated that the sub-contracts were opposite ends of a continuum. They view the constructs as orthogonal (similar to satisfaction and dissatisfaction) and they advise future researchers to create effectuation measures that are not opposite to causation measures (Dew et al. 2011).

However, while Sarasvathy (n.y.p.) points out that the same person can use both types of reasoning at different times, and that the most successful entrepreneurs are capable of both and use both modes well, she states that entrepreneurs prefer effectual reasoning over causal reasoning in the early stages of a new venture. Most entrepreneurs do not transition to causal reasoning well into the latter stages of the process (Sarasvathy n.y.p.). In this report, the two constructs will be viewed as orthogonal, the participants in the study can express both effectual and causational reasoning and one does not have to exclude the other.

2.3 Introduction of the Culture Paradigm

To move effectuation research into an intermediate state, researchers should explore relationships between already established constructs and effectuation (Perry, Chandler et al. 2011). Sarasvathy (2001) states that all entrepreneurs start with three categories of means: who they are – their traits, tastes and abilities; what they know – their education, training, expertise, and experience; and whom they know – their social and professional networks (Sarasvathy 2001). The importance of prior knowledge and social networks for entrepreneurs creating new firms and markets has already been shown through research (Uzzi 1997; Shane 2000; Hite and Hesterly 2001; Wiklund and Shepherd 2003). But the first category – who they are – deserves some more attention. Sarasvathy (2001) states that entrepreneurs often use something fundamental about their identity to explain their actions and decisions. She claims that someone's identity causes him to prefer particular processes or way of living and deciding. This identity can be either fictive or real; freely chosen or

socioculturally constructed (Sarasvathy 2001). An important aspect of someone's identity is his or her culture. As mentioned before, an individual's personality and behavior are interconnected with the national culture from which they stem from (Berger 1991). It is therefore not unthinkable that entrepreneurs from different cultures might have different preferences when it comes to the effectuation – causation approach in creating new ventures. This is what this research is focusing on.

There are many different definitions of what constitutes 'culture'. Stephan Dahl (n.y.p.) looks at definitions from Hofstede (1994), Trompenaars and Hampden-Turner (1997) and Spencer-Oatey (2000), to come to the conclusion that culture can be described as 'a shared set of basic assumptions and values, with resultant behavioral norms, attitudes and beliefs which manifest themselves in systems and institutions as well as behavioral patterns and non-behavioral items.' (Dahl n.y.p., p. 6) He goes on to state that there are various levels to culture and that culture is shared among members of one group or society (Dahl n.y.p.). Dahl (n.y.p.) states that for the members of such a group, culture has an interpretative function. Culture is learned, and even though all members of a group or society share the same culture, an individuals' personality modifies expressions of culture-resultant behavior (Dahl n.y.p.).

2.4 Cultural Dimensions

Research on culture has mainly concentrated on the cultural constructs: culture dimensions and personality traits (Fink, Neyer et al. 2006). Cultural dimensions are the explanatory variables that are most used in cross-cultural management literature; they are constructs of values, which can be quantitavely measured (Fink, Neyer et al. 2006). The units of analysis to research culture have been debated significantly. Dahl (n.y.p.) states that there are several reasons why national boundaries have been preferred. First of all, the nationality of a person is something that can easily be determined. Secondly, there is substantial support for the idea that all people coming from one country will all largely be shaped by the same values and norms (Dahl n.y.p.). Over the years, there have been many classifications of cultural dimensions in mainstream literature (for an overview, see Fink et al. 2005). In this research, the work of Geert Hofstede (2001) will be used, because his dimensions can easily be employed in everyday intercultural situations and the complex construct of culture is broken down to five dimensions. Furthermore, other cultural dimensions, such as those from Trompenaars and Hampden-Turner are linked to those originally created by Hofstede (Dahl n.y.p.). Hofstede (2001) conducted research among employees of the large company IBM in different countries. He used survey results that were collected within subsidiaries of the large multinational company IBM. The survey was conducted twice, in 1968 and in 1972. In total there were more than 116.000 questionnaires. From the results he first identified four dimensions (Hofstede 1980). Later he added a fifth dimension, Long term orientation (Hofstede 1991).

- '*Power distance* is the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. The basic problem involved is the degree of human inequality that underlies the functioning of each particular society.
- *Uncertainty Avoidance* is the extent to which a culture programs its members to feel either uncomfortable or comfortable is unstructured situations. Unstructured situations are novel, unknown, surprising, different from usual. The basic problem involved is the degree to which a society tries to control the uncontrollable.
- *Individualism* on the one side versus its opposite, *collectivism*, is the degree to which individuals are supposed to look after themselves or remain integrated into groups, usually around the family. Positioning itself between these poles is a very basic problem all societies face.
- *Masculinity* versus its opposite, *femininity*, refers to the distribution of emotional roles between the genders, which is another fundamental problem for any society to which a range of solutions are found; it opposes "tough" masculine to "tender" feminine societies.
- *Long-term* versus *short-term orientation* refers to the extent to which a culture programs its members to accept delayed gratification of their material, social, and emotional needs.' (Hofstede 2001, p. xix-xx)

As mentioned earlier, this study will focus on the influence of national culture on the entrepreneurial processes used when creating a new venture. To do so, data will be collected in two countries: the Netherlands and Australia. To make valid hypotheses about the effectuation – causation approach in both countries, I will focus on the cultural dimension in which the two countries differ the most. As can be seen in table 1, this is 'Masculinity'. After conducting a factor analysis of mean country work goals from the IBM data Hofstede gathered, a strong factor was found opposing social to ego goals. Factor scores on the axis *social/ego* were used as a basis for computing the Masculinity Index (Hofstede 2001). The Masculinity Index was brought in a range between 0 and 100. Australia has a value of 61, which is above average, and is therefore considered a masculine country and the Netherlands has a value of 14 and is therefore considered an extremely feminine country. Another reason to choose Masculinity is that research performed by Schmitt and Allik (2005) showed that the cultural dimension of Masculinity was significantly associated with national self-esteem. In cultures that have a more equal value placed on men and women (low-MAS countries), people's self-esteem tended to be higher (Schmitt and Allik 2005). This could have a significant impact on the entrepreneurial processes used to create a new venture. Furthermore, a masculine culture is most

encouraging for the development of a strong entrepreneurial orientation according to Lee and Peterson (2000). This is another reason to focus on this particular cultural dimension.

	Power Distance	Uncertainty Avoidance	Individualism	Masculinity	Long-term Orientation
The Netherlands	38	53	80	14	44
Australia	36	51	90	61	31

Table 1: Cultural dimension scores The Netherlands and Australia (Hofstede, 2001)

2.5 The Influence of Masculinity on Effectuation – Causation

Hofstede (2001) provides a summary of value connotations of MAS (Masculinity) differences found in surveys and other comparative studies, the Masculinity societal norm and key differences between high-MAS and low-MAS societies in the areas of: (1) Family and School, (2) Gender Roles and Consumer Behaviour and (3) The Work Situation (Hofstede 2001). From all of these statements, the following statements are exceptionally relevant in the effectuation – causation debate:

	Low MAS	**High MAS**
1.	Achievement in terms of quality of contacts and environment.	Achievement in terms of ego boosting, wealth, and recognition.
2.	Relationship orientation.	Ego orientation.
3.	Stress on who you are.	Stress on what you do.
4.	Managers expected to use intuition, deal with feelings and seek consensus.	Managers expected to be decisive, firm, assertive, aggressive, competitive, just.

Table 2: Statements about Low-MAS and High-MAS societies that are relevant to the effectuation – causation debate (Hofstede 2001)

Effectual logic will begin with a set of given means, focus on affordable loss, emphasize strategic alliances and precommitments, leverage environmental contingencies and seek to control an unpredictable future (Sarasvathy 2001). The first and second statement in table 2 show that in low-MAS societies, the quality of contacts is related to the sense of achievement, and that people in a low-MAS society are oriented towards relationships. This corresponds to the effectual set of given means, in particular: 'whom they know'. The third statement shows that in low-MAS societies, the set of means 'who you are' is very important for individuals. The fourth statement shows that in low-MAS societies, managers are expected to use their intuition when doing business. All of these components point to the fact that in low-MAS societies, there is a strong emphasis on a given set of means ('whom they know' and 'who they are') and intuition is expected from managers.

As mentioned before, people in low-MAS societies have higher self-esteem (Schmitt and Allik 2005). If we link this to the entrepreneurial processes of effectuation and causation, a higher self-esteem in low-MAS societies can mean a greater reliance on one's own knowledge, competences and 'gut-feel', which are components of effectuation. Schmitt and Allik (2005) also broke down the construct 'self-esteem' into the two facets 'self-liking' and 'self-competence'. They defined 'self-competence' as 'the instrumental feature of the self as causal agent, the sense that one is confident, capable and efficacious' (Scmitt and Allik 2005, p. 625). They found that self-competence is significantly correlated with the masculinity of a culture. Both the focus on a given set of means found in low-MAS societies that is identified from the statements made by Hofstede (2001) and the higher level of self-esteem found by Schmitt and Allik (2005) lead to the following hypothesis:

H1: Entrepreneurs in the low-MAS society of the Netherlands will rely much more on the effectual element 'a given set of means' than entrepreneurs in the high-MAS society of Australia.

Causal logic will begin with a given goal, focus on expected returns, emphasize competitive analysis, exploit preexisting knowledge and try to predict an uncertain future (Sarasvathy 2001). Both the first and the second statement show that in high-MAS societies there is a focus on the individual, an orientation on the ego. However, this does not mean a focus on 'who you are'; in high-MAS societies there is a strong emphasis on what you do. The fourth statement shows that in high-MAS societies, managers are expected to be decisive. This might correspond to a stronger reliance on formal decision-making. It also states that it is expected of managers to be competitive. This implies a strong sense of competition, and may result in competitive analyses.

Extreme responding behavior is another concept that is related to masculinity, in a positive way (Johnson, Kulesa et al. 2005). Johnson, Kulesa et al. (2005) also found that respondents in more masculine societies were less likely to respond in an acquiescence way. They attribute both these findings to the fact that individuals in more masculine societies value decisive, assertive, daring action and clarity (Johnson, Kulesa et al. 2005). The focus on decisiveness and clarity could indicate that in high-MAS countries, there is a stronger focus on formal decision-making. This is an element of causational entrepreneurial processes. Both the previously identified strong sense of competition and the focus on decisiveness and clarity in high-MAS societies lead to the following hypothesis:

H2: Entrepreneurs in the high-MAS society of Australia will rely much more on competitive analysis and the analysis of data than entrepreneurs in the low-MAS society of the Netherlands.

Masculinity has also been identified as an important leadership element in a great number of studies (Epitropaki and Martin 2004), they also name a great number of studies that have shown that

Masculinity is negatively related to leadership. Their own research identified Masculinity as an antiprototypic leadership dimension. They concluded that masculine attributes can predict leader emergence or advancement, but that these attributes not necessarily lead to a developmental and constructive form of leadership. They conclude that masculine attributes are therefore not seen as desired by participants in their research (Epitropaki and Martin 2004).

Small and Medium Enterprise's (SME) in nations with high levels of masculinity are less likely to pursue technological alliances than nations who are more feminine and cooperative (Steensma, Marino et al. (1999) . SME's in feminine nations are also more likely to use technology alliances when technological uncertainty increased than SME's in masculine nations. Steensma, Marino et al. (1999) identify SME's in masculine countries resist the use of technological alliances to maintain a competitive stance. This focus on alliances in low-MAS societies is typical for effectual reasoning, where strategic alliances and precommitments are emphasized.

Research conducted by Van Oudenhoven (1998) supports the conclusion that culture has an important influence on the way managers deal with social conflict. Their data suggest that masculinity is an important cultural dimension in explaining managerial dispute resolution. They found support that managers from more feminine countries have a tendency to show more problem-solving behavior when they have a conflict with colleagues than managers from more masculine countries (Van Oudenhoven 1998). This tendency for an open constructive approach for resolving managerial disputes corresponds to the focus on relationships in low-MAS societies. The stress on partnerships is viewed as an important element of effectual reasoning by Sarasvathy (2001). Both the results from research conducted by Steensma, Marino et al. (1999), a strong focus on alliances in low-MAS societies, and the results from research conducted by Van Oudenhoven (1998), a focus on relationships in low-MAS societies, lead to the following hypothesis:

H3: Entrepreneurs in the low-MAS society of the Netherlands will rely much more on alliances or partnerships than entrepreneurs in the high-MAS society of Australia.

From the statements in table 2, the high self-esteem in low-MAS societies and from the proven tendency to form alliances, it can be concluded that in low-MAS societies there is a tendency to start with means rather than ends (which Sarasvathy sees as element 1 of effectuation) and partnerships are stressed (which Sarasvathy sees as element 4 of effectuation). In high-MAS societies, the statements in table 2 and the extreme responding behavior lead us to expect a greater reliance on formal decision-making and competitive analyses, which are components of causation. If we combine all of this with the general direction expressed in hypothesis 1, 2 and 3, I form the following general hypothesis:

H4: Entrepreneurs in the low-MAS society of the Netherlands will rely much more on effectuation reasoning when creating a new venture than entrepreneurs in the high-MAS society of Australia.

Figure 1 shows hypotheses 1 through 4, the relation between the masculinity of a society and the entrepreneurial processes used when creating a new venture in general and starting with a given set of means, a focus on competitive analysis and analysis of data and a focus on alliances and partnerships in particular.

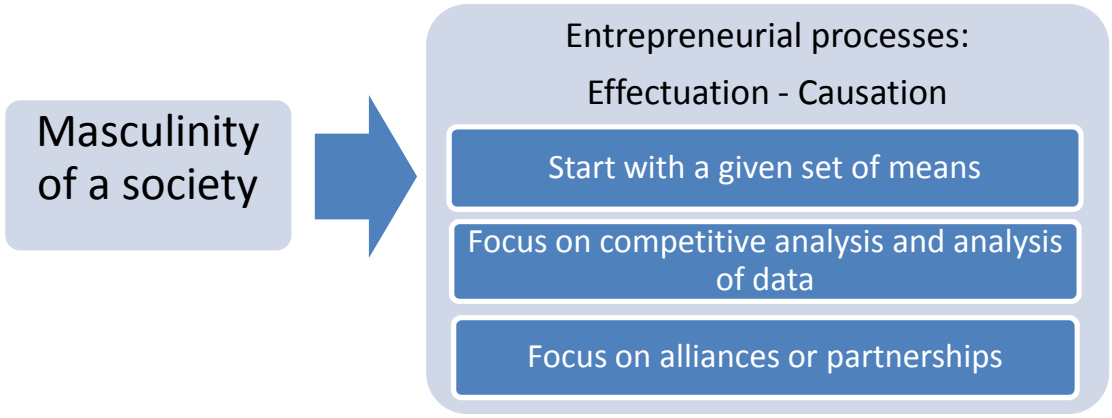

Figure 1: Research model

3. Methods

3.1 Research Setting and Data Collection

The data used in this study are gathered in two countries: the Netherlands and Australia. In each country, student-entrepreneurs were interviewed. To create a homogenous group, I only interviewed entrepreneurs who were still studying at universities and started a business, or had been graduated for less than two years and started a business. Student-entrepreneurs were chosen because they are in situations where effectuation might apply. Perry, Chandler et al. (2011) stress the importance of this: '[…] it will become more important to sample subjects who are more representative of the individuals who are in the process of starting businesses, developing not-for-profit organizations, or engaging in other activities where effectuation might apply.' (Perry, Chandler et al. 2011, p. 13) The selection of subjects will also make sure that the two samples from the Netherlands and Australia are comparable. Student-entrepreneurs that started businesses in all kinds of areas were eligible to join. Because this research focuses on culture, only student-entrepreneurs that were originally from Australia and the Netherlands are included. The final sample consists of 20 Dutch student-entrepreneurs and 20 Australian student-entrepreneurs. Specifications can be found in table 3.

Country	Male	Female	Total
Australia	17	3	20
The Netherlands	18	2	20

Table 3: Specification of the research sample

The data collection method consisted of think-aloud sessions with the student-entrepreneurs. During a think-aloud session the test subject is asked to keep talking and speak out loud every thought that comes to mind during the test. There are several major advantages of using think-aloud sessions: there are no interruptions or suggestive prompts or questions, it avoids interpretation by the subject and only assumes a simple verbalization process and the verbal protocols that are created through the think-aloud sessions are treated as data, which creates an objective method (Van Someren, Barnard et al. 1994). Ericsson and Simon (1981) have also concluded that in general, a subject's thought processes are not interfered with by instructions to think aloud. These instructions may however slow the thought processes down somewhat. Think-aloud sessions are accepted as a useful research method and are applied in multiple studies (Isenberg 1986; Sarasvathy 2001; Dew, Read et al. 2009).

In this study, student-entrepreneurs were asked to work through a fictional case and solve decision problems typical for the creation of a new venture, in this case a coffee company called Coffee Inc. The case consists of ten decision problems. These problems were modeled after the case used in Sarasvathy (2008). She also asked entrepreneurs to create an imaginary company with a tangible end-product. In Sarasvathy's case this was a game, in this report it was coffee. The ten decision problems in the case were slightly modified to suit the coffee company, but the main subjects that were tackled remained the same. I will describe the first three decision problems below, for a full overview see appendix A. During the creation of this case it was important to keep in mind that in order to use the think-aloud method satisfactorily, the tasks should not be so easy that the subject could solve them in an automated manner (Van Someren, Barnard et al. 1994). It was also important that the tasks were representative of the cognitive processes involved, a problem that is too unusual may not provide the relevant data (Van Someren, Barnard et al. 1994). Sarasvathy (2008) has only used the most frequently mentioned and widely described subset of problems and since the current case is modeled after hers, this requirement has been fulfilled. The first three problems described in the case were:

1. *Identifying the market*, the identification of potential customers, potential competitors, market research to establish these and the growth possibilities of the company.

2. *Defining the market*, the choice of which market segment to sell to, the price of the product and the marketing efforts to sell to the segment(s) of choice.
3. *Meeting payroll*, the meeting of the payroll in times of financial need. Does the entrepreneur borrow money, and from whom?

The complete case can be found in appendix B. The student-entrepreneurs had a maximum of two hours to complete the case, which proved to be enough time. During the sessions there was a focus on making the subject feel comfortable and the interviewer interfered as little as possible, which is important to obtain the most useful data (Van Someren, Barnard et al. 1994). To let the entrepreneurs get used to talking out loud, I asked them to read the case out loud. I used this and a simple question about their family home as the exercises in thinking aloud as suggested by Van Someren, Barnard et al. (1994). I also gave the subjects a written instruction before the session, which asked the subjects to keep thinking out loud. This proved to be very helpful, and I was only sporadically obliged to remind the entrepreneurs to talk out loud.

The think-aloud sessions with the student-entrepreneurs were recorded and later transcribed. This method is preferred over direct encoding from the audio-tape because then at a later point in time a revised coding scheme can be used more easily, to make sure that the coding is done objectively by making it easier for a different researcher to inspect the coding and to avoid the effect of context on coding protocol fragments (Van Someren, Barnard et al. 1994). Another researcher and myself later analyzed the transcripts independently. Each text block was assigned with an appropriate code; the coding scheme is depicted in table 4. It was also recorded to specifically what content the code refers to. For example, when a text block is given the code: G – goal driven, it is also recorded which goal was mentioned.

Causal	**Effectual**
G – Goal driven	M – Means-based
R – Expected returns	L – Affordable loss
B – Competitive analysis	A – Use of alliances or partnerships
K – Existing market knowledge	E – Exploration of contingency
P – Predictions of the future	C – Non-predictive control
Z – Emphasis on analysis of data	D – Distrusting or opposing (marketing) research
X – Causal (no subcategory given)	N – Effectual (no subcategory given)

Table 4: Coding scheme

3.2 Dependent Variable

The dependent variable of this study is the reliance on the entrepreneurial processes effectuation – causation. To analyse this variable, I will use frequency counts. For each student-entrepreneur, it will be analyzed how many times he or she expresses causal thoughts, and how many times he or she expresses effectual thoughts. It will also be analyzed which of the elements of the two reasoning methods were used and how many of each reasoning method elements were used per problem area. With this information I will be able to see the total amount of effectual and causal reasoning per element per problem area. I will then divide the amount of text blocks coded as 'means-based' by the total amount of text blocks coded to obtain the percentage of 'means-based' reasoning used by the participants. This will be used to test the first hypothesis.

The earlier mentioned analysis also makes it possible to calculate the percentage of 'competitive analysis' and 'analysis of data' reasoning that was used by participants, by adding both the amount of text blocks coded as 'competitive analysis' and 'analysis of data' and dividing the result by the total amount of text blocks coded. This will be used to test the second hypothesis.

The percentage of 'use of alliances or partnerships' reasoning is calculated in a similar way. The amount of text blocks that are coded as 'use of alliances or partnerships' will be divided by the total amount of text blocks coded. This will be used to test the third hypothesis.

To test the fourth, general, hypothesis, I will to calculate the total percentage of effectual reasoning by dividing the total amount of text blocks coded as effectual through the total number of coded text blocks.

3.3 Independent Variable

The independent variable in this study is the masculinity of the two countries in which the student-entrepreneurs that are interviewed come from. For this variable, I will use the classification that Hofstede (2001) assigned to these countries. The Masculinity Index value of the Netherlands is 14, and is considered 'at the extreme feminine pole', Australia has a Masculinity Index value of 61, which is above average and is therefore considered a masculine country (Hofstede, 2001).

3.4 Control Variables

The following variables were used as control variables: gender, age and the Chandler scale (Chandler, DeTienne et al. 2011). Although a national masculine or feminine culture should be represented in both males and females of a country, I will control for gender. It could for example be possible that women in both masculine and feminine cultures differ from men in their approach. The age of the participants was also taken into account.

The Chandler scale is an instrument developed by Chandler, DeTienne et al. (2011). It consists of a survey with 17 statements about the use of effectuation and causation in the subject's own business, where respondents can show their level of agreement with each statement on a five point Likert-type scale, anchored by 'strongly disagree' and 'strongly agree' (Chandler, DeTienne et al. 2011). It measures the reasoning actually used by the respondents in the creation of their own venture. For this reason, the answers that the subjects gave on the Chandler scale and the answers they gave while going through the case study are compared to see if there are major differences.

4 Results

4.1 Low-MAS versus high-MAS society: means-based reasoning

I hypothesized that entrepreneurs in the low-MAS society of the Netherlands would rely much more on a the effectual element 'a given set of means' than entrepreneurs in the high-MAS society of Australia. To test this I first created the categorical variable Country_ID (1 = Australia, 2 = The Netherlands). I then created the continuous variable TT_PX, which states the total amount of text blocks coded for each problem, where X is the number of the specific problem. I then computed the variable Percentage Means-based by adding the scores on the variable PX_E_M_Means, which states the number of text blocks coded as means-based for each problem area X, and dividing that by the sum of TT_PX. I tested the normality of the sample and the data did not significantly deviate from a normal distribution (see results in appendix C), I therefore used an independent samples t-test to compare the means. There was significant relation found. Results of the independent samples t-test can be found in table 5. This means that hypothesis 1 is not supported.

Independent Samples t-test on Country ID and Percentage of means-based reasoning

Group Statistics

	Country ID	N	Mean	Std. Deviation	Std. Error Mean
PercentageMeans based	Australia	20	.2349	.09075	.02029
	The Netherlands	20	.2415	.09612	.02149

		PercentageMeansbased	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	.003	
	Sig.	.959	
t-test for Equality of Means	t	.079	.079
	df	38	37.875
	Sig. (2-tailed)	.937	.937
	Mean Difference	.00234	.00234
	Std. Error Difference	.02956	.02956
	95% Confidence Interval of the Difference Lower	-.05750	-.05751
	95% Confidence Interval of the Difference Upper	.06218	.06219

Table 5: Results of the independent samples t-test on country ID and percentage of means-based reasoning

4.2 Low-MAS versus high-MAS society: competitive analysis and emphasis on analysis of data

The second hypothesis stated that entrepreneurs in the high-MAS society of Australia would rely much more on competitive analysis and the analysis of data than entrepreneurs in the low-MAS society of the Netherlands. To test this, I added the amount of text blocks coded as 'competitive analysis' for each problem area X (PX_C_B_Competitive_analysis) to the amount of text blocks coded as 'emphasis on analysis of data for each problem area X (PX_C_Z_Emphasis_data) and divided the total by the sum of TT_PX. The sample did not deviate significantly from a normal distribution (see results in appendix C), so I used an independent samples t-test to compare the means for both the Australian and the Dutch entrepreneurs. On average, Australian entrepreneurs had a much higher reliance on competitive analysis and the analysis of data (M = 0.1821, SE = 0.04503) than Dutch entrepreneurs (M = 0.0915, SE = 0.03587). This relationship was found significant t(38) = 7.043, p < 0.001. Results are shown in table 6. This means that hypothesis 2 is supported.

Independent Samples t-test on Country ID and Percentage of reliance on competitive analysis and emphasis on the analysis of data

Group Statistics

	Country ID	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Percentage Analysis	Australia	20	.1821	.04503	.01007
	The Netherlands	20	.0915	.03587	.00802

			PercentageAnalysis	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		1.574	
	Sig.		.217	
t-test for Equality of Means	t		7.043	7.043
	df		38	36.189
	Sig. (2-tailed)		.000	.000
	Mean Difference		.09067	.09067
	Std. Error Difference		.01287	.01287
	95% Confidence Interval of the Difference	Lower	.06461	.06456
		Upper	.11672	.11677

Table 6: Results of the independent samples t-test on country ID and the percentage of reliance on competitive analysis and emphasis on the analysis of data

4.3 Low-MAS versus high-MAS society: use of alliances or partnerships

To test the third hypothesis, that stated that entrepreneurs in the low-MAS society of the Netherlands would rely much more on alliances or partnerships than entrepreneurs in the high-MAS society of Australia, I added all the text blocks that were coded as 'use of alliances or partnerships' for each problem area (PX_E_A_Alliances) and divided that by the total amount of text blocks coded (TT_PX). I tested the normality of the sample using a Shapiro-Wilk test and both the groups differed significantly from a normal distribution (see results in appendix C). I therefore used a Mann-Whitney U test to compare the means from both groups of entrepreneurs. There was no statistically significant relation found. This means that hypothesis 3 is not supported. Results of the Mann-Whitney U test are shown in table 7 and table 8.

Mann-Whitney U test on Country ID and the Percentage of reliance on alliances or partnerships

	Country of Origin	N	Mean Rank	Sum of Ranks
PercentageAlliances	Australia	20	17.68	353.50
	The Netherlands	20	23.33	466.50
	Total	40		

Table 7: Ranks of the Mann-Whitney U test on country ID and the percentage of reliance on alliances or partnerships

	Percentage Alliances
Mann-Whitney U	143.500
Wilcoxon W	353.500
Z	-1.529
Asymp. Sig. (2-tailed)	.126
Exact Sig. [2*(1-tailed Sig.)]	.127

Table 8: Results of the Mann-Whitney U test on country ID and the percentage of reliance on alliances and partnerships

4.4 Low-MAS versus high-MAS society: general relationship

I hypothesized that student-entrepreneurs in the low-MAS society of the Netherlands would use effectual reasoning more than their counterparts in the high-MAS society of Australia. To test this, I created the following continuous variables: TC_PX, which states the total amount of text blocks that were coded as 'causal' for each of the ten problems, where X is the number of the specific problem and TE_PX, which states the total amount of text blocks coded as 'effectual' for each of the ten problems, where X is the number of the specific problem. I also used the earlier mentioned variable TT_PX to then compute the variable Overall Percentage Effectual, which was calculated by the

following formula: Overall Percentage Effectual =$\sum_1^{10} TE\_PX / \sum_1^{10} TT\_PX$. I compared the two different groups from Australia (1) and the Netherlands (2) by conducting an independent samples t-test. The grouping variable was the earlier mentioned categorical variable Country_ID and the dependent variable was Overall Percentage Effectual. I hypothesized that Dutch entrepreneurs would use effectual reasoning more than Australian entrepreneurs, so I divided the two-tailed significance value by two to get the one-tailed significance value. On average, Dutch entrepreneurs had a higher overall usage of effectual reasoning (M = 0.462, SE = 0.023) than Australian entrepreneurs (M = 0.399, SE = 0.021). This difference was significant t(38) = -2.015, p < .05. Results are shown in table 9. This means that hypothesis 4 is supported; entrepreneurs in the low-MAS society of the Netherlands use more effectual reasoning than entrepreneurs in the high-MAS society of Australia.

Independent Samples t-test on Country ID and Overall Percentage of Effectual Reasoning

Group Statistics

	Country ID	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
OverallPercentage Effectual	Australia	20	.3999	.09243	.02067
	The Netherlands	20	.4627	.10421	.02330

		OverallPercentageEffectual	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	.214	
	Sig.	.646	
t-test for Equality of Means	t	-2.015	-2.015
	df	38	37.466
	Sig. (2-tailed)	.051	.051
	Mean Difference	-.06275	-.06275
	Std. Error Difference	.03115	.03115
	95% Confidence Interval of the Difference Lower	-.12580	-.12583
	95% Confidence Interval of the Difference Upper	.00031	.00034

Table 9: Results of the Independent Samples t-test on Country ID and Overall Percentage of Effectual Reasoning

4.5 Effectual reasoning per problem area

After establishing that the overall relationship as proposed in hypothesis 4 holds, I will now analyze the ten problem areas separately. To do this I created the continuous variable Percentage Effectual PX, where X is the number of the specific problem. This variable was computed using the following formula: Percentage Effectual PX $=TE\_PX/TT\_PX$. For each problem area, I compared the two different groups of entrepreneurs (1 = Australia, 2 = the Netherlands) using Country_ID as a grouping variable and Percentage Effectual PX as the dependent variable. I suspected that the overall relationship holds for each problem area, so I divided the two-tailed significance value by two to get the one-tailed significance value. In problem 4, financing, Dutch entrepreneurs used more effectual reasoning (M = 0.7038, SE = 0.050) than Australian entrepreneurs (M = 0.544, SE = 0.053), with a significant difference t(37) = -2.183, p < .05. A significant association with t(38) = -1.810, p < .05 was also found in problem 6, product re-development, where Dutch entrepreneurs used more effectual reasoning (M= 0.4274, SE = 0.029) than Australian entrepreneurs (M = 0.350, SE = 0.030). Problem 7, company growth, also showed a significant difference with t(38) = -2.006, p < .05, where Dutch entrepreneurs used more effectual reasoning (M = 0.585, SE = 0.070) than Australian entrepreneurs (M = 0.406, SE = 0.055). In problem 8, hiring professional management, Dutch entrepreneurs used more effectual reasoning (M = 0.508, SE = 0.090) than Australian entrepreneurs (M = 0.258, SE = 0.055) with a significant association of t(38) = -2.361, p < .05. Finally, the relationship was found significant with t(38) = -2.309, p < .05 in problem 10, exit, where Dutch entrepreneurs used more effectual reasoning (M = 0.704, SE = 0.090) than Australian entrepreneurs (M = 0.430, SE = 0.076). In the other 5 problem areas, no significant associations were found. The significant results are shown in table 10 and 11, for a full overview of the results, see appendix D. This means that even though the overall relationship holds, it does not hold in every problem area. However, if there was a significant association found in a problem area, it was consistent with the overall relationship that was found; Dutch entrepreneurs used more effectual reasoning than Australian entrepreneurs in all of these problem areas.

Group Statistics					
	Country of origin	N	Mean	Std. Deviation	Std. Error Mean
PercentageEffectualP4	Australia	20	.5441	.23725	.05305
	The Netherlands	19	.7038	.21832	.05009
PercentageEffectualP6	Australia	20	.3505	.13490	.03017
	The Netherlands	20	.4274	.13377	.02991
PercentageEffectualP7	Australia	20	.4063	.24623	.05506
	The Netherlands	20	.5858	.31569	.07059

PercentageEffectualP8	Australia	20	.2583	.24912	.05571
	The Netherlands	20	.5083	.40275	.09006
PercentageEffectualP10	Australia	20	.4308	.33995	.07601
	The Netherlands	20	.7042	.40598	.09078

Table 10: Group Statistics of the significant results of the Independent Samples t-test on Country ID and Percentage of Effectual Reasoning per problem area

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PercentageEffectualP4	Equal var assumed	.053	.819	-2.183	37	.035	-.15961	.07312	-.30776	-.01146
	Equal var not assumed			-2.188	36.966	.035	-.15961	.07296	-.30745	-.01178
PercentageEffectualP6	Equal var assumed	.118	.733	-1.810	38	.078	-.07689	.04248	-.16289	.00911
	Equal var not assumed			-1.810	37.997	.078	-.07689	.04248	-.16289	.00911
PercentageEffectualP7	Equal var assumed	1.139	.293	-2.006	38	.052	-.17957	.08952	-.36080	.00166
	Equal var not assumed			-2.006	35.873	.052	-.17957	.08952	-.36115	.00201
PercentageEffectualP8	Equal var assumed	4.227	.047	-2.361	38	.023	-.25000	.10589	-.46437	-.03563
	Equal var not assumed			-2.361	31.682	.025	-.25000	.10589	-.46578	-.03422
PercentageEffectualP10	Equal var assumed	2.636	.113	-2.309	38	.027	-.27333	.11840	-.51303	-.03364
	Equal var not assumed			-2.309	36.862	.027	-.27333	.11840	-.51327	-.03340

Table 11: Significant results of the Independent Samples t-test on Country ID and Percentage Effectual Reasoning per problem area

4.6 Effects of control variables

The results reported above were tested for two control variables, the gender of the entrepreneur and the subject's age. To control for gender, I created the categorical variable Subject_Sex, with 1 = male and 2 = female. I performed an independent samples t-test with Subject_Sex as the grouping variable and Overall Percentage Effectual as the dependent variable. I found no significant associations. Results are shown in table 12.

Independent Samples t-test on Subject Sex and Overall Percentage of Effectual Reasoning

Group Statistics

	Subject_Sex	N	Mean	Std. Deviation	Std. Error Mean
OverallPercentage Effectual	Male	33	.4277	.09826	.01710
	Female	5	.4700	.14507	.06488

			OverallPercentageEffectual	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		1.680	
	Sig.		.203	
t-test for Equality of Means	t		-.843	-.630
	df		36	40573
	Sig. (2-tailed)		.405	.559
	Mean Difference		-.04226	-.04226
	Std. Error Difference		.05015	.06710
	95% Confidence Interval of the Difference	Lower	-.14396	-.21970
		Upper	.05945	.13518

Table 12: Results of the Independent Samples t-test on Subject Sex and Overall Percentage Effectual Reasoning

To control for age, I created a continuous variable Subject_Age. I performed an independent samples t-test where I split the age at a cut-off point of 25 years. I found no significant associations. Results are shown in table 13.

Independent Samples t-test on Subject Age and Overall Percentage of Effectual Reasoning

Group Statistics

	Subject_Sex	N	Mean	Std. Deviation	Std. Error Mean
OverallPercentage Effectual	>= 25	21	.4165	.10018	.02186
	< 25	17	.4540	.10809	.02622

		OverallPercentageEffectual	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	.002	
	Sig.	.969	
t-test for Equality of Means	t	-1.108	-1.099
	df	36	33.160
	Sig. (2-tailed)	.275	.280
	Mean Difference	-.03751	-.03751
	Std. Error Difference	.03386	.03413
	95% Confidence Interval of the Difference Lower	-.10618	-.10695
	95% Confidence Interval of the Difference Upper	.03115	.03192

Table 13: Results of the Independent Samples t-test on Subject Age and Overall Percentage of Effectual Reasoning

I also used the Chandler scale to see if there were any major differences between the answers the subjects gave during the case study and the way they created their own business. I created the continuous variables TC_C, which adds the answers that the subjects gave on the statements testing effectuation and TE_C, which adds the answers that the subjects gave on the statements testing causation and finally TT_C, which adds all the answers given by the subjects on all the statements. I then computed the variable Percentage Effectual Chandler, where I divided the total amount of answers on effectual statements, TE_C, by the total amount of answers given on the statements, TT_C. I then executed a paired samples t-test where I compared the variables Overall Percentage Effectual and Percentage Effectual Chandler. The answers given during the case study were less effectual (M = 0.4344, SE = 0.01671) than the way the subjects conducted their own business (M = 0.4893, SE = 0.01025). This relation was significant $t(37) = 3.007$, $p < .05$. Results are shown in table 14. This means that the answers that were collected in this study might not show the extent to which student-entrepreneurs use both entrepreneurial processes. I also conducted a separate analysis of

both groups, but the proposed relationship in which student-entrepreneurs use effectual reasoning more in their own company than in the case study holds. Results are shown in appendix E.

Paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PercentageEffectualChandler	.4893	38	.06319	.01025
	OverallPercentageEffectual	.4344	38	.10298	.01671

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PercentageEffectualChandler & OverallPercentageEffectual	38	.148	.375

Paired Samples Test

			Pair 1
			Percentage Effectual Chandler – Overall Percentage Effectual
Paired Differences	Mean		.05490
	Std. Deviation		.11256
	Std. Error Mean		.01826
	95% Confidence Interval of the Difference	Lower	.01791
		Upper	.09190
t			3.007
df			37
Sig. (2-tailed)			.005

Table 14: Results of the paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler

5 Discussion & Conclusion

5.1 Discussion

If we look at the sample that was used in this study, we see that the sample consisted solely of student-entrepreneurs. While that ensured that the samples from the two countries were comparable, it also limits the validity of the results. The significant relations found might not be transferable to expert entrepreneurs. The sample was also not evenly distributed between men and women. However, this might not be a limitation because it could represent the actual distribution of the gender of entrepreneurs.

One of the things that could have an impact on the validity of the results found in this study was that it was very difficult to find student-entrepreneurs in Australia. Several participants explained that in Australia it is much more customary to work for several years before starting your own venture. To create two comparable groups, these entrepreneurs could not be included in the study. The result of this is that the group of Australian student-entrepreneurs might not fully represent the 'Australian entrepreneur'.

A different limitation of this research was that the data that was used to classify the Netherlands and Australia as low- and high-MAS countries was taken from Hofstede's research. Criticisms of this set of data are for example that it was gathered a long time ago and the data are insufficient and IBM centric. The validity of his research today is questioned by many authors (Schwartz and Bilsky 1990; McSweeney 2002; Baskerville 2003; Javidan, House et al. 2006).

5.2 Conclusion

This study set out to find empirical evidence for the relationship between a country's national culture and the entrepreneurial processes that entrepreneurs use when starting and growing a new venture. The aspect of culture that was focused on was the masculinity-dimension as identified by Hofstede (2001). First it was hypothesized that Dutch entrepreneurs would rely more on the effectual element 'a given set of means' than Australian entrepreneurs. This hypothesis was not supported by the data. The second hypothesis stated that Australian entrepreneurs would rely more on competitive analysis and emphasize the analysis of data more than their Dutch counterparts. Our data provided a statistically significant result for this hypothesis. This implies that Australian entrepreneurs do in fact rely more on competitive analysis and analysis of data than Dutch entrepreneurs. It was then hypothesized that Dutch entrepreneurs would rely more on alliances or partnerships than Australian entrepreneurs, but there was no significant relation found to support this data. Finally, a general hypothesis regarding the relation between entrepreneurial processes and culture was defined, which

stated that entrepreneurs in societies with a low level of Masculinity, in this case the Netherlands, would use more effectual reasoning when creating a new venture than entrepreneurs in societies with a high level of Masculinity, in this case Australia. There was a significant association found, indicating that entrepreneurs in low-MAS societies use more effectual reasoning in the creation of a venture than entrepreneurs in high-MAS societies.

After investigating the overall relationship, this study empirically investigated ten separate problem areas. Significant relations were found in the areas: (4) financing, (6) product re-development, (7) company growth, (8) hiring professional management and (10) exit. All of the relations found were in the same direction as the overall relation; Dutch entrepreneurs used more effectual reasoning than Australian entrepreneurs. In the other areas, no significant relation was found. Recall that the main research question as stated in the introduction was: *Does national culture influence the entrepreneurial processes used by entrepreneurs?* The results found in this study imply that national culture and in this case the cultural dimension Masculinity as defined by Hofstede (1980), do indeed influence the entrepreneurial processes used by entrepreneurs. The results further imply that the direction of this relation is that the lower a country scores on the Masculinity Index, the more its entrepreneurs use effectual reasoning when starting up a new venture.

With these results, this report makes three contributions to the effectuation-causation debate. First of all, this report introduces the culture paradigm into the effectuation-debate. Perry, Chandler et al. (Perry, Chandler et al. 2011) recommended an exploration of the relationships between effectuation and established constructs, to move the research into the next stage of development. This study found a significant difference between student-entrepreneurs from two different countries, namely the Netherlands and Australia. This suggests that the national culture of a company has an influence on the entrepreneurial processes that are used by entrepreneurs.

Second, the results found in this report imply that Hofstede's cultural dimension 'Masculinity' is an important part of the effectuation-causation debate. In this study it was found that two countries that were very far apart on this dimension had significant differences in the entrepreneurial processes they used. This implies that the score on the Masculinity dimension is related to the entrepreneurial processes the inhabitants of that country use when they create a new venture. However, the finding that this relationship only holds for 5 out of 10 problem areas suggests that there are other things at play as well, for example the subject that entrepreneurs have to make a decision on. The results also showed that the relation was significant in the latter stages of the case, when the company had gotten larger. This suggests that the difference in use of entrepreneurial processes between the two countries got larger as the company grew.

The final contribution is that the results found in this report show that even though the general relationship holds, it does not hold for every element of effectual and causal reasoning. This suggests that there are elements of effectual reasoning that are used by all entrepreneurs and other key elements that are influenced by culture and thus differ from society to society.

These findings have several implications. First of all the results of this study suggest that national culture should be a factor in the way business schools teach business management courses. There are currently a number of measures that are taught to business students all over the world. This study implies that only people in high-MAS societies use these measures to start up a new venture. The results found in this report suggest that in low-MAS societies the business programs should be less focused on causal reasoning and more on effectual reasoning. A focus on the use of partnerships could for example prove more useful for business students in low-MAS societies.

Secondly, the results found in this study impact the way entrepreneurs do business, either in their own country or abroad. If they know how the country is classified on the masculinity dimension, they can adapt their way of creating a new venture accordingly. For example, this research implies that in a country that is specified as high-MAS, the importance of official measures is more stressed. One implication could be that in order to get a bank loan, a business plan is needed. In a society that is specified as low-MAS, entrepreneurs can focus on partnerships and alliances to make their business successful.

The results also imply that not all elements of effectual and causal reasoning are affected by national culture. This may change the way researchers look at the two concepts, from a view where every element is affected by a construct to a view where several constructs could all have a different level of influence on the separate elements.

5.3 Recommendations for further research

One of the interesting findings in this study is that the overall relationship only holds for 5 out of 10 problem areas. Further research should try to explain not only why the relationship was not found in the other areas, but if the entrepreneurial processes used could differ from problem area to problem area. Further research should investigate if the specific problem at hand makes entrepreneurs use a specific way of reasoning.

This study looks into one dimension of the construct culture. Further research should focus on the other dimensions identified by Hofstede and other dimensions identified by other authors to further investigate the relationship between culture and entrepreneurial processes.

A third recommendation is to expand the sample to include expert entrepreneurs. These might provide a very different picture. It would also be interesting to compare the expert entrepreneurs with the student-entrepreneurs. This could show if the use of entrepreneurial processes is influenced by the level of experience an entrepreneur has. This level of experience could be divided into 'working experience in general' and 'entrepreneurial experience' to fully understand the influence of the construct.

It would also be interesting if in future research the focus from 'effectuation' as one concept would be turned to the separate elements of effectual reasoning, because the results found in this study suggest that the separate elements may be influenced differently.

The last recommendation is to expand this research to include more countries. Even though this research shows a significant association between culture and entrepreneurial processes, gathering more data in different countries could provide an insight not only as to how culture influences entrepreneurs, but also *why* it does.

References

Baskerville, R. F. (2003). "Hofstede never studied culture." Accounting, Organization and Society **28**: 1-14.

Berger, B. (1991). The culture of entrepreneurship. San Francisco, CA: ICS Press.

Chandler, G. N., D. R. DeTienne, et al. (2011). "Causation and effectuation processes: a validation study." Journal of Business Venturing **26**: 375-390.

Dahl, S. Intercultural Research: The Current State of Knowledge. London, Middlesex University Business School.

Dew, N., S. Read, et al. (2009). "Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices." Journal of Business Venturing **24**: 287-309.

Epitropaki, O. and R. Martin (2004). "Implicit Leadership Theories in Applied Settings: Factor, Structure, Generalizability, and Stability Over Time." Journal of Applied Psychology **89**(2): 293-310.

Ericsson, K. A. and H. A. Simon (1981). Protocol Analysis, University of Colorado
Carnegie-Mellon University.

Erixon, F. (2009). "SMEs in Europe: taking stock and looking forward." European View **8**: 293-300.

Fink, G., A. Neyer, et al. (2006). "Understanding cross-cultural management interaction." Int. Studies of Management and Organization **36**(4): 38-60.

Harms, R. Antecedents and consequences of effectuation and causation in the international new venture creation process.

Hite, J. M. and W. S. Hesterly (2001). "The evolution of firm networks: from emergence to early growth of the firm." Strategic Management Journal **22**(3): 275-286.

Hofstede, G. (1980). Culture's consequences: International differences in work-related values. Beverly Hills, Cal., and London, Sage.

Hofstede, G. (1991). Cultures and organizations: software of the mind. London, McGraw-Hill UK.

Hofstede, G. (1994). Cultures and Organizations: software of the mind: intercultural. London, HarperCollins.

Hofstede, G. (2001). Culture's consequences: Comparing values, behaviors, institutions, and Organizations across nations. Thousand Oaks, California, Sage Publications.

Isenberg, D. J. (1986). "Thinking and Managing: A verbal protocol analysis of managerial problem solving." The Academy of Management Journal **29**(4): 775-788.

Javidan, M., R. J. House, et al. (2006). "Conceptualizing and measuring cultures and their consequences: a comparative review of GLOBE's and Hofstede's approaches." Journal of International Business Studies **37**(6): 897-914.

Johnson, T., P. Kulesa, et al. (2005). "The relation between culture and response styles." Journal of Cross-Cultural Psychology **36**(2): 264-277.

Lee, S. M. and S. J. Peterson (2000). "Culture, Entrepreneurial Orientation, and Global Competitiveness." Journal of World Business **35**(4).

McSweeney, B. (2002). "Hofstede's model of national cultural differences and their consequences:A triumph of faith – a failure of analysis." Human Relations **55**(1): 89-118.

Oudenhoven, J. P. v. (1998). "Managerial Conflict Management in Five European Countries: The Importance of Power Distance, Uncertainty Avoidance, and Masculinity." Applied Psychology: an international review **47**(3): 439-455.

Perry, J. T., G. N. Chandler, et al. (2011). "Entrepreneurial effectuation: a review and suggestions for future research." Entrepreneurship Theory and Practice.

Read, S., M. Song, et al. (2009). "A meta-analytic review of effectuation and venture performance." Journal of Business Venturing **24**: 573-587.

Sarasvathy, S. D. What makes entrepreneurs entrepreneurial? , University of Virginia.

Sarasvathy, S. D. (2001). "Causation and Effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency." The Academy of Management Review **26**(2): 243-263.

Sarasvathy, S. D. (2008). Effectuation, elements of entrepreneurial expertise, Edward Elgar Publishing limited.

Schmitt, D. P. and J. Allik (2005). "Simultaneous administration of the Rosenberg self-esteem scale in 53 nations." Journal of Personality and Social Psychology **89**(4): 623-642.

Schwartz, S. H. and W. Bilsky (1990). "Toward a theory of the universal content and structure of values: extensions and cross-cultural replications." Journal of Personality and Social Psychology **58**(5): 878-891.

Shane, S. (2000). "Prior knowledge and the discovery of entrepreneurial opportunities." Organization Science **11**(4): 448-469.

Someren, M. W. V., Y. F. Barnard, et al. (1994). The think aloud method. London, Academic Press.

Spencer-Oatey, H. (2000). Culturally speaking: managing rapport through talk across cultures. London, Continuum.

Steensma, H. K., L. Marino, et al. (1999). "The influence of national culture on the formation of technology alliances by entrepreneurial firms." Academy of Management Journal.

Trompenaars, F. and C. Hampden-Turner (1997). Riding the waves of culture: understanding cultural diversity in business. London, Nicholas Brearley.

Uzzi, B. (1997). "Social structure and competition in interfirm networks: the paradox of embeddedness." Administrative Science Quarterly **42**(1): 35-67.

Wiklund, J. and D. Shepherd (2003). "Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses." Strategic Management Journal **24**(13).

Wiltbank, R., N. Dew, et al. (2006). "What to do next? The case for non-predictive strategy." Strategic Management Journal **27**(10): 981-998.

Appendix A – Description of the 10 decision problems

The case that the student-entrepreneurs worked through described the beginning of a new venture, Coffee Inc. The ten problems that they had to solve had to do with (in order):

1 *Identifying the market*, the identification of potential customers, potential competitors, market research to establish these and the growth possibilities of the company.
2 *Defining the market*, the choice of which market segment to sell to, the price of the product and the marketing efforts to sell to the segment(s) of choice.
3 *Meeting payroll*, the meeting of the payroll in times of financial need. Does the entrepreneur borrow money, and from whom?
4 *Financing*, does the entrepreneur want to search an investment partner or settle for a slow growth rate? And when the entrepreneur chooses to attract a partner, which type does he or she go for?
5 *Leadership/Vision*, the vision of the entrepreneur for the future and the way he or she wants to convey this vision to the world.
6 *Product re-development*, the entrepreneur has to choose to diversify or focus completely on one concept. The entrepreneur also has to make decisions about the development of a new concept.
7 *Company growth*, deals with personnel decisions and the corporate culture in the growing company.
8 *Hiring professional management*, entrepreneurs have to interview high potentials and decide what kind of characteristics they find desirable for the new manager.
9 *Goodwill*, deals with projects that are good for society.
10 *Exit*, does the entrepreneur sell the company after it has grown or does he or she continue on to further grow the company?

Appendix B – Case study

Introduction

In the following experiment, you will solve ten decision problems. These problems arise in the context of building a new company for an imaginary product. A detailed description of the product follows this introduction.

Before you start on the product description and the problems, I do need one act of creative imagination on your part. I request you to put yourself in the role of the lead entrepreneur in building this company -- i.e., you have very little money of your own to start this company , but you have about five years relevant working experience in the area.

Description

Since some time, you have been thinking of starting a coffee-corner at your university. Your inspiration for this came from the fact that when you, as a student, want to get a fresh cup of coffee, there was no possibility. You did not like the coffee from the machines which are available in the university buildings. Next to that, you had to pay an amount of money, which was in no relation to the quality of the coffee. You have been working in a coffee corner in your hometown for 5 years so you know what goes around

You saw the success of other coffee corners, but since these were from expensive franchisers, you thought that it should be possible to still start your own. In several reports in newspapers and magazines you read that there is an increasing demand for drinking coffee in your home country.

You have taken all possible precautions regarding intellectual property. The name of your company is C*offee, Inc.*

Problem 1: Identifying the market

Before we look at some market research data, please answer the following questions -- one at a time:

1. **Who could be your potential customers for your coffee corner?**

2. **Who could be your potential competitors?**

3. **What information would you seek about potential customers and competitors -- list questions you would want answered.**

4. **How will you find out this information -- what kind of market research would you do?**

5. **What do you think are the growth possibilities for this company?**

Problem 2: Defining the market

In this problem you have to make some marketing decisions. Based on secondary market research (published sources, etc.), you estimate that there are three major segments who are interested in drinking coffee at your coffee corner:

Segment	Estimated total size
Students	40.000
Staff members	20.000
Visitors (annually)	10.000

- The estimated value of regular coffee sales in your home country is €448 Million
- The estimated value of specialized coffee sales €100 Million.

Both are expected to grow at a minimum rate of 5% p.a. for the next 5 years.

The following are the results of the primary (direct) market research that you have completed.

Survey #1 – Students, staff members and visitors were asked via questionnaires to express their interest in a coffee corner. Also, they were asked to indicate what they were willing to spend on coffee.

In total, 1000 people were asked and 500 filled out the questionnaire.

Willing to pay (€)	Students (%)	Staff members (%)	visitors (%)
0,50 – 0,75	52	26	45
0,75 – 1,00	30	38	32
1,00 – 1,25	16	22	15
1.25 – 1,75	2	9	8
1,75 – 2,50	0	5	0
Total	100	100	100

Survey #2 -- The prices of coffee, offered during lunch breaks in between lectures

Willing to pay (€)	Students (%)	Staff members (%)	visitors (%)
0,50 – 0,75	65	21	51
0,75 – 1,00	25	49	42
1,00 – 1,25	10	19	7
1.25 – 1,75	0	8	0
1,75 – 2,50	0	3	0
Total	100	100	100

Survey #3 -- Focus Group of educators (high school and community college teachers and administrators)

Staff members of the university who participated in the focus group found the plan of the coffee corner very interesting – but indicated that the range of coffee could potentially be expended before they would be willing to spend €1,50 or more. With the current offer, they would be willing to pay €1,00 - € 1,25 and would demand a bonus system in which they could save up for discounts after a certain amount of coffee drunk.

Both at the lunch and the focus group, participants are very positive and enthusiastic about the coffee corner. They provide you with good feedback on specific features and also extend suggestions for improvement. But the staff members are particularly keen on going beyond the regular coffee aspect; they make it clear that much more diversity would be required in trying to market the product to them. They e.g. indicate that there are companies which might be capable of printing advertisement on cups for discounts on the coffee.

Based on all your market research, you arrive at the following **cost estimates for marketing** your product.

Internet	€200 upfront + €50 per month thereafter
Newspapers	Relatively cheap -- but ads could cost €500 upfront
Cinema	€2000 to 4000 per month, with €1000 upfront
Commercials on Local TV	€5000 to 10.000 upfront
Direct advertisement elsewhere (think of sport-canteens, handing out lighters with advertisement, etc)	Involves recruiting and training ‘sales representatives’

Competition

None of the following four possible competitors sell cheap quality cups of coffee in the center of your hometown - you are unique in this respect.

Company	General price level per cup of coffee	Revenue	Where to be found
Starbucks	€ 5,00	€6.5 billion	Large cities / global
Peet's	€ 4,00	€225 million	Large cities / mostly USA
Coffee Bean	€ 4,50	€130 million	Large cities / global
Douwe Egberts store	€ 2,50	€25 million	Large cities/ Netherlands

The coffee corner companies are making a **net return of 25% on sales.**

At this point, please take your time and make the following decisions: (Please continue thinking aloud as you arrive at your decisions)

1. **Which market segment/segments will you sell your product to?**
2. **How will you price your product?**
3. **How will you sell to your selected market segment/segments?**

Problem 3: Meeting Payroll

You have started the company on a shoestring, using face to face promotion as your primary source of marketing. You are six months into marketing your product. You have priced the products at the low end of the surveys at 0.50 – 0.75 euro. You have about 3000 customers per month. Based on numerous suggestions provided by your customers, you believe you can start selling special coffees in the range of 1.25 – 1.50 euro. This would especially be the case when you would redesign the interior of the coffee corner to make it into a more upscale coffee corner.

You have invested the last of your savings and maxed out your credit cards in order to make sure you have the coffee asked for in stock-- You need this to participate in a competition on where 'Architecture meets Catering', where you will get a lot of exposure.

You have four employees -- and you are out of cash to meet the next payroll. You estimate you need 30,000 euro to survive the next three months and to come up with a supercool store design to be able to participate in the competition. You have the following four options:

1. Borrow from your girlfriend's parents -- they are not overly wealthy, but could probably get their hands on 30,000 euro if they needed to.

2. Borrow from some old friends from the university and your old student job.

3. Convince your parents to take out a mortgage on their house.

4. Convince your employees to wait out the period.

Which of these options would you choose? Why?

Problem 4: Financing

Your store design has won the first prize in the New talent category at the 'Architecture meets Catering' competition. This in turn has led to inquiries from large coffee suppliers such as Nestlé Netherlands B.V. to market the concept (with full multi-media exposure) nationally. You estimate that it will take you six months to develop the concept in more detail and about three months after that to actually roll it out on three main channels -- Web, national newspapers and national TV. The coffee will be priced at 4.00 euro per unit. You estimate that you will need 150.000 euro till break even (by the third quarter of the second year) -- this includes enhancing the concept, putting in place excellent (support) staff, full-blown advertising and web links, and the development of a small direct sales staff for selling on site.

You estimate the following sales projections for the first five years (You are at the beginning of Year 1 now):

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	€ 100,000	€ 150,000	€ 300.000	€500.000	€1 M
Profits	€ < 0	€ 20.000	€40.000	€200.000	€300.000

You have three financing options:

Option 1

A venture capitalist who specializes in startup companies in catering and adjacent areas, is willing to finance you € 150.000 for 48% of your company.

Option 2

A friend of the family who has extensive experience in catering is eager to go into partnership with you -- for 33% of the company. He is able to invest €150.000 but wants to work for the company at a base salary of €40,000 per year. He agrees to accept a minimum level of €30,000 for the first two years to keep his family going and defer the rest to when the company starts making money. You like and respect this man and have no personal feelings against him.

Option 3

You can continue the company with internal cash flow -- grow at a much slower pace.

1. **Which option would you choose? Why?**

2. **If the venture capitalist is also willing to take only 33% of the company, which option would you choose?**

Problem 5: Leadership/Vision

You have found the financing and have signed a contract with two major coffee suppliers to market your product. You have hired new staff and moved into new premises. A national newspaper is doing a series of stories on local entrepreneurs and wants to do a story on you -- you know that this interview would be a defining moment in the development of your company and you see this as an opportunity to convey to the world (and to your new employees) your vision for your company's future. This newspaper article series has been very successful; it routinely gets picked up by other national papers and TV networks. One of the reasons for its success is its headline which consists of a one-line quote that captures the entrepreneur's vision for the company -- to be achieved by the year 2012.

You have come up with several possibilities for the one-liner:

1. Starbucks is the past -- *Coffee inc* is the future.

2. We aim to have at least a thousand employees by the year 2014.

3. The fastest growing coffee caterer.

4. Invest in *coffee inc*—Enjoy the Dutch tradition.

Which one of the above do you choose? Why? If you do not choose any of them and want to come up with ideas for an alternative, please do so.

Problem 6: Product Re-development, Part One

You are almost at the end of your fifth year in operation -- you have just managed to break even (later than you projected). You have opened the doors to all three segments (students, staff, visitors). Sales, while they are steady and continuous, are rather 'colourless' and you start doubting whether you will ever reach your growth targets. You decide to conduct a serious market research initiative in order to find out how to grow your sales. You organize focus groups with both existing customers and potential new customers. The main problem seems to be the "great divide" between the regular coffee and the specialized products. Over 90% of the participants in your focus groups find the regular products very interesting. But when it comes to the specialised coffees, there is a clear division of opinion. The participants who primarily enjoy the regular coffees almost *never* bother to go and buy more expensive coffees and wonder why all that 'e*lite stuff'* is there; and those who are primarily interested in the specialised coffees think that the regular products downgrade the atmosphere.

How do you respond to this feedback?

Problem 6: Product Re-development, Part Two

You go back to the origins and think of a concept which could provide solutions to both parties. You come up with a solution in which you have 1 existing shop and 1 new shop. Shop number 1 (the existing shop) is for more regular coffees, the new shop is for exclusive coffees and teas. With the exclusive shop one should think of specialized Asian, South American and African coffee specialties, which would result in a total amount of 30 different types of coffee. Teas will come in a variety of 20

types. Also, exclusive cakes and pastries are sold. Next to this, customers can also borrow books, read newspapers and have access to free wireless internet. In the regular coffee booth, you plan to sell 8 different regular coffees, like plain cappuccino, espresso, etc, and add 5 regular teas (e.g. China Blossem and Rooibos) and limited variety of donuts and muffins.

You first start to promote the idea with the exclusive shop with a variety of 15 different coffees and 15 different teas, and also a smaller variety of cakes and pastries than you eventually will include. This together with free newspapers and free wireless internet is what you show to the focus group. It turns out that especially the exclusive shop is received very enthusiastically and customers are willing to pay 2 to 2,5 times as much as asked previously.

One of the requirements is however that you have to extend to what you had in mind (the 20 teas, 30 coffees, the books, newspapers and free wireless internet). You have to decide whether to undertake this massive concept change or to focus completely on one of the two concepts. If you want to extend it will cost you as much as 200.000 euro and a separate marketing effort.

Year	1	2	3	4	5	6	7	8
Estimated Sales (€M)	0.10	0.50	1	6	12	18	24	30
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2			

Which of the two options do you choose? Why?

Assuming you have decided to go in for the extension, you have to choose one of the following three options:

1. Undertake the redesign effort in-house -- Estimated Cost: €250.000 .

2. Out-source the redesign to the new company within your home-country-- Estimated Cost: € 200.000

3. Out-source the redesign to the new company outside your home-country-- Estimated Cost: € 100.000

Which option do you choose? Why?

Problem 7: Growing the Company, Part One

You are almost at the end of the sixth year of business. You are now running two types of shops—under the umbrella of Coffee inc.

- Plain Coffee (sales between 1.00 – 5.00 euro) where you sell a limited amount of regular coffees and teas and a basic amount of donuts, muffins and chocolates
- Exquise (sales between 5.00 – 15.00 euro) where you offer the 'complete picture'

Your number of outlets and therewith the new coffee shop managers has swelled to twenty from the original three and you are continuing to expand your sales force and develop an even better concept of Exquise for more upscale areas in town. Greg Thomas, who is an excellent salesman (dealing with the regular coffees previously) and has headed the sales team since Day One, has clearly not kept up with the issues of growing the company -- he is definitely not the person to lead the new Exquise. How will you deal with this situation?

Year	1	2	3	4	5	6	7	8
						Revised		
Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6		

Would you:

1. Fire him?

2. Hire a new sales manager to head the sales team? If so, would you consult with Greg before doing so? How would you break the news to him?

Please feel free to elaborate on any other way of dealing with the situation.

Problem 7: Growing the Company, Part Two

Although the company has been growing for a while now, you are trying to keep the entrepreneurial culture of the company alive. But you begin to notice that your partner is fostering a more "corporate ambiance" -- long and unnecessary meetings, complicated organization charts, colorful expense accounts, "consultants" to "optimize market potential", and so on. When you try to talk with him about it, he argues that it is time for the company to go "corporate" -- that such a "professional" image would actually be good for the bottom line.

Year	1	2	3	4	5	6	7	8
						Revised		

Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5

How will you deal with this situation? Do you think it is time for *Coffee Inc.* to go "corporate"?

Problem 8: Hiring Professional Management

You are now in the eighth year of your company. You are doing very well -- surpassing growth targets and building reliable market share. Your sales are €27,5 Million and you project a growth rate of at least 25% per year for the next three years.

Year	1	2	3	4	5	6	7	8
						Revised		
Estimated Sales ($M)	0.10	0.50	1	6	12	6	12	20
Actual Sales ($M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5

Your Board's advice is to hire professional management to run the company so you can focus on issues of new growth and new strategic initiatives. Assuming you have already developed a short list of three high-potential candidates to interview for the position of **Chief Operating Officer** (COO), how would you prepare for the interview?

List questions you would ask, techniques you would use, and critical issues you would take into account in hiring this person.

Problem 9: Goodwill

At this point, you are approached by the principal of an inner city school in your area, who also works with 10 other schools such as hers -- she believes that Exquise could be a perfect learning environment for her students in her Catering study program.

She requests you to work with a couple of really enthusiastic teachers to develop some elementary learning materials for the students to work on in the Exquise shops. The project would mean not only an investment of €100.000 (approx.) for modifications, but also a substantial chunk of your time for about six months during development and then about 10 sessions of classroom participation per year for a couple of years at least.

Note: Your sales are €27,5 Million and you project a growth rate of at least 25% per year for the next three years.

Will you take the initiative for this project?

If not, why not?

If yes, would you:

a) **Donate the product?**

b) **Sell it at cost?**

c) **Sell it at your regular profit margin?**

Why?

Problem 10: Exit

You are now in the tenth year of your company -- *Exquise* is a great success and thanks to your new targeted strategies, even *Plain Coffee* is growing satisfactorily. You have acquired three other profitable catering concepts. You are doing €45 Million in sales and project that you will reach €70 Million within a year. At this time you face two possible directions for your company.

Direction 1

Your accountants and bankers think that this is a good time for you to take the company public. The Initial Public Offering (IPO; new stocks) market is booming and catering is in a solid upward trend. They estimate you should make an initial public offering of 2 million shares at €30 per share. The company has a total of 12 million shares outstanding.

Direction 2

At this point in time, Starbucks approaches you and makes an offer for your company -- it seems they have decided to get in on the more exclusive segment and have decided to enter the arena through acquisitions -- they see you as a perfect fit for their strategy and offer you €300 Million.

Year	1	2	3	4	5	6	7	8	9	10
						Revised				
Estimated Sales (€M)	0.10	0.50	1	6	12	6	12	20	30	45
Actual Sales (€M)	0.14	0.48	0.84	2.8	4.2	8.6	20	27.5	38	70

Which of the above two directions do you choose? Why?

End

Appendix C – Testing for Normality

		Shapiro-Wilk		
	Country of origin	**Statistic**	**df**	**Sig.**
PercentageMeansbased	Australia	.930	20	.158
	The Netherlands	.968	20	.703

Table 15: Results of Shapiro-Wilk test for normality hypothesis 1

		Shapiro-Wilk		
	Country of origin	**Statistic**	**df**	**Sig.**
PercentageAnalysis	Australia	.962	20	.585
	The Netherlands	.979	20	.920

Table 16: Results of Shapiro-Wilk test for normality hypothesis 2

		Shapiro-Wilk		
	Country of origin	**Statistic**	**df**	**Sig.**
PercentageAlliances	Australia	.892	20	.029
	The Netherlands	.825	20	.002

Table 17: Results of Shapiro-Wilk test for normality hypothesis 3

		Shapiro-Wilk		
	Country of origin	**Statistic**	**df**	**Sig.**
OverallPercentageEffectual	Australia	.938	20	.222
	The Netherlands	.984	20	.978

Table 18: Results of Shapiro-Wilk test for normality hypothesis 4

Appendix D – Results of analysis per problem area

Group Statistics					
	Country of origin	N	Mean	Std. Deviation	Std. Error Mean
PercentageEffectualP1	Australia	20	.2503	.15572	.03482
	The Netherlands	20	.2276	.15426	.03449
PercentageEffectualP2	Australia	20	.2907	.16312	.03647
	The Netherlands	20	.3589	.24487	.05475
PercentageEffectualP3	Australia	20	.6122	.30946	.06920
	The Netherlands	20	.5683	.29956	.06698
PercentageEffectualP4	Australia	20	.5441	.23725	.05305
	The Netherlands	19	.7038	.21832	.05009
PercentageEffectualP5	Australia	20	.5344	.35111	.07851
	The Netherlands	20	.6792	.39392	.08808
PercentageEffectualP6	Australia	20	.3505	.13490	.03017
	The Netherlands	20	.4274	.13377	.02991
PercentageEffectualP7	Australia	20	.4063	.24623	.05506
	The Netherlands	20	.5858	.31569	.07059
PercentageEffectualP8	Australia	20	.2583	.24912	.05571
	The Netherlands	20	.5083	.40275	.09006
PercentageEffectualP9	Australia	20	.6800	.23425	.05238
	The Netherlands	19	.5752	.34205	.07847
PercentageEffectualP10	Australia	20	.4308	.33995	.07601
	The Netherlands	20	.7042	.40598	.09078

Table 19: Group Statistics of the Independent Samples t-test on Country ID and Percentage of Effectual Reasoning per problem area

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PercentageEffectualP1	Equal var assumed	.002	.964	.463	38	.646	.02269	.04901	-.07653	.12191
	Equal var not assumed			.463	37.997	.646	.02269	.04901	-.07653	.12191

Percent ageEffectualP2	Equal var assumed	1.724	.197	-1.037	38	.306	-.06821	.06579	-.20140	.06497
	Equal var not assumed			-1.037	33.088	.307	-.06821	.06579	-.20205	.06562
Percent ageEffectualP3	Equal var assumed	.318	.576	.456	38	.651	.04389	.09631	-.15107	.23885
	Equal var not assumed			.456	37.960	.651	.04389	.09631	-.15108	.23886
Percent ageEffectualP4	Equal var assumed	.053	.819	-2.183	37	.035	-.15961	.07312	-.30776	-.01146
	Equal var not assumed			-2.188	36.966	.035	-.15961	.07296	-.30745	-.01178
Percent ageEffectualP5	Equal var assumed	1.506	.227	-1.227	38	.227	-.14476	.11799	-.38363	.09410
	Equal var not assumed			-1.227	37.508	.228	-.14476	.11799	-.38373	.09421
Percent ageEffectualP6	Equal var assumed	.118	.733	-1.810	38	.078	-.07689	.04248	-.16289	.00911
	Equal var not assumed			-1.810	37.997	.078	-.07689	.04248	-.16289	.00911
Percent ageEffectualP7	Equal var assumed	1.139	.293	-2.006	38	.052	-.17957	.08952	-.36080	.00166
	Equal var not assumed			-2.006	35.873	.052	-.17957	.08952	-.36115	.00201
Percent ageEffectualP8	Equal var assumed	4.227	.047	-2.361	38	.023	-.25000	.10589	-.46437	-.03563
	Equal var not assumed			-2.361	31.682	.025	-.25000	.10589	-.46578	-.03422
Percent ageEffectualP9	Equal var assumed	3.929	.055	1.122	37	.269	.10481	.09345	-.08454	.29417
	Equal var not assumed			1.111	31.659	.275	.10481	.09435	-.08745	.29707
Percent ageEffectualP10	Equal var assumed	2.636	.113	-2.309	38	.027	-.27333	.11840	-.51303	-.03364
	Equal var not assumed			-2.309	36.862	.027	-.27333	.11840	-.51327	-.03340

Table 20: Results of the Independent Samples t-test on Country ID and Percentage Effectual Reasoning per problem area

Appendix E – Results of Paired Samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler

Paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler for Australian Entrepreneurs

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PercentageEffectualChandler	.4564	18	.05421	.01278
	OverallPercentageEffectual	.4029	18	.09460	.02230

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PercentageEffectualChandler & OverallPercentageEffectual	18	.156	.537

Paired Samples Test

			Pair 1
			Percentage Effectual Chandler – Overall Percentage Effectual
Paired Differences	Mean		.05351
	Std. Deviation		.10145
	Std. Error Mean		.02391
	95% Confidence Interval of the Difference	Lower	.00306
		Upper	.10396
t			2.238
df			17
Sig. (2-tailed)			.039

Table 21: Results of paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler for Australian entrepreneurs

Paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler for Dutch Entrepreneurs

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PercentageEffectualChandler	.5188	20	.05659	.0165
	OverallPercentageEffectual	.4627	20	.10421	.02330

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PercentageEffectualChandler & OverallPercentageEffectual	20	-.118	.619

Paired Samples Test

			Pair 1
			Percentage Effectual Chandler – Overall Percentage Effectual
Paired Differences	Mean		.05616
	Std. Deviation		.12433
	Std. Error Mean		.02780
	95% Confidence Interval of the Difference	Lower	-.00203
		Upper	.11435
t			2.020
df			19
Sig. (2-tailed)			.058

Table 22: Results of paired samples t-test on Overall Percentage Effectual and Percentage Effectual Chandler for Dutch entrepreneurs

Appendix F- Reflectieverslag Bachelor Opdracht Technische Bedrijfskunde 2012

Inleiding

In dit reflectieverslag zal ik mijn persoonlijk professioneel functioneren bespreken tijdens de voorbereiding en de uitvoering van de bachelor opdracht die ik voor de opleiding Technische Bedrijfskunde heb uitgevoerd in het collegejaar 2011-2012. De opdracht bestond uit het onderzoeken van de invloed van cultuur op de denkprocessen die ondernemers gebruiken bij het opzetten van een nieuwe onderneming. Ik werd bij deze opdracht begeleid door mr. Stienstra en mr. Harms van de Universiteit Twente. Een gedeelte van de data heb ik verzameld in Australië, waar ik drie maanden verbleef. In de rest van dit verslag zal ik mijn persoonlijke leerpunten op het gebied van planning, onderzoek en begeleiding bespreken. Vervolgens zal ik een conclusie over mijn leertraject trekken en aandachtspunten voor de toekomst bespreken.

Leerpunten

Planning

Toen ik begon met het zoeken naar een opdracht wist ik al dat ik graag naar het buitenland wilde. Ik had er daarom rekening mee gehouden dat ik een aantal maanden moest reserveren voor dit avontuur. De enige einddeadline die ik op dat moment had was dat mijn bachelor opdracht afgerond moest zijn voor het einde van het collegejaar, in verband met de langstudeerboete die de overheid wilde invoeren. Toen ik in februari akkoord was gegaan met deze opdracht, was er echter de kwestie: waar in het buitenland kan ik heen? Voordat er een plekje was gevonden waar ik het grootste gedeelte van mijn onderzoek uit zou voeren waren er al een paar weken verstreken. Nadat bekend was dat ik in Australië terecht kon ging het echter heel snel. Binnen een maand na de bevestiging zou ik namelijk al vertrekken. Omdat het lastig was om echt te beginnen aan de opdracht toen ik nog niet wist waar ik heen zou gaan kwam ik toen onder redelijke tijdsdruk. Het is echter gelukt om alles op tijd te regelen en begin april vertrok ik naar Australië. Aanvankelijk was mijn planning om in Australië alleen de interviews af te nemen en deze uit te typen, maar doordat duidelijk werd dat er weinig tijd zou zijn om een groen licht gesprek te plannen nadat ik terug zou komen begin juli moest ik ook mijn verslag al af hebben voor ik terug zou komen uit Australië. Dit gaf erg veel tijdsdruk. Een bijkomend nadeel was dat het heel erg lastig was om geschikte onderzoekskandidaten te vinden in Australië. Hierdoor kwam ik nog meer in tijdsnood, aangezien ik niet verder kon met mijn onderzoek voordat ik data had verzameld.

Onderzoek

Een van de belangrijkste leerpunten van mijn vorige bachelor opdracht was het maken van een Excel tabel om een goed overzicht van de theorie te krijgen. Dit heb ik meegenomen in deze bachelor opdracht, in een tabel heb ik per artikel de relevante stukken tekst in de verschillende kolommen gezet. Hierdoor had ik geen goed overzicht van de theorie en kon ik makkelijk bepalen wat relevant was voor mijn onderzoek en wat ik kon gebruiken. Dit maakte het veel makkelijker om door de theorie heen te gaan en uiteindelijk ook om een theoretisch kader op te stellen.

Iets waar ik wat meer problemen mee had was het opstellen van de hypotheses. Ik had meerdere bronnen gevonden die relevant waren, maar in eerste instantie heb ik maar 1 hypothese opgesteld. Op aanraden van mr. Stienstra heb ik nog een keer uitgebreid naar de verzamelde theorie gekeken en ben zo uiteindelijk op vier hypotheses uitgekomen.

Voor de analyse van de data heb ik het statistisch software programma SPSS gebruikt. Aangezien ik in mijn vorige bachelor opdracht ook uitgebreid met dit programma gewerkt, was het deze keer heel makkelijk om met dit programma te werken.

Zoals eerder genoemd was het erg moeilijk om geschikte onderzoekskandidaten te vinden in Australië. Iets wat ik als een, overigens onvermijdelijke, belemmering heb ervaren is dat mijn data ook relevant moesten zijn voor het EPICC project. Gedurende het hele onderzoek heb ik moeten werken met materialen en richtlijnen die al voor mij opgesteld waren. Hierdoor was het bijzonder lastig om dingen aan te passen. Ik denk dat ik in het vervolg liever een onderzoek uitvoer waarbij ik zelf de materialen en de richtlijnen ontwikkel, of in ieder geval nauwer betrokken ben bij het ontwikkelen ervan.

Begeleiding

Tijdens deze bachelor opdracht heb ik een aantal lessen geleerd over begeleiding. De eerste volgde uit het feit dat ik toen ik eenmaal in Australië zat nog geen enkele afspraak over mijn conceptverslagen had gehad. Dit leidde tot onverwachte complicaties. In het vervolg zal ik zelf veel duidelijker zijn wat ik van mijn begeleiders verwacht en alvast afspraken maken om dingen te bespreken. De tweede les is dat ik nooit meer in de afrondende fase van een groot project wil zitten tijdens de zomervakantie. Door vakanties van mij en mijn begeleiders en eigen onderzoek van mijn begeleiders was het bijvoorbeeld lastig om een groen licht gesprek en een colloquium te plannen. Dit heeft bij mij voor veel stress aan het einde van mijn verblijf in Australië gezorgd, aangezien ik opeens meer moest afronden in het buitenland dan ik oorspronkelijk van plan was.

Conclusie

Door deze bachelor opdracht heb ik een aantal dingen geleerd. Ten eerste heb ik weer wat meer ervaring bij het uitvoeren van wetenschappelijk onderzoek. Waar bij mijn vorige bachelor opdracht een groot gedeelte van de gegevens al voorhanden was, moest ik bij deze opdracht actief data verzamelen. Dat heeft me een heel nieuw inzicht gegeven in het uitvoeren van onderzoek. Mijn voornaamste ervaring is dat het heel lastig is om geschikte mensen te vinden die ook nog bereid zijn om mee te werken aan onderzoek. Ik denk dat ik door deze ervaring in de toekomst zelf veel vaker mee zal werken met onderzoeken.

Iets anders wat ik zeker mee zal nemen is dat ik van tevoren duidelijke afspraken wil maken met begeleiders over wat er van elkaar verwacht wordt. Een praktisch voorbeeld is bijvoorbeeld een goedgekeurd theoretisch kader voordat er naar het buitenland gereisd wordt, en persoonlijk contact om dingen te bespreken in plaats van uitsluitend contact via de e-mail. Al met al ben ik tevreden met mijn professioneel functioneren en denk ik dat ik een aantal waardevolle lessen heb geleerd tijdens de uitvoering van deze opdracht.