Origin of cognitive differences: a cross-cultural research on the impact of national culture on novice entrepreneurs' cognitive thinking styles

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ABSTRACT,

Entrepreneurship is a wide field of research that arises in many cultures around the world while also having a large impact on today's economy. Due to its large scale, till this day it includes many aspects that are unaccounted for. One aspect is regarding to the distinctive minds from entrepreneurs. The way in which an entrepreneur processes information in order to act upon a task or take decisions is what differentiates each of them from each other. In order to have a better understanding of the cognitive differences within the human mind, specifically in novice entrepreneurs, this paper researches how differences in one's national culture can influence the cognitive information processing mode. The paper will rely on two main theories: the cultural tightness/looseness and the cognitive distinction between intuitive and analytical information processing modes. Novice entrepreneurs from the Netherlands and Malaysia were asked to fill out a survey concerning the cognitive Need for Cognition and Faith in Intuition scale as well as the cultural tightness/looseness scale. The results in means where significant in the favor of the Netherlands being perceived to have a looser culture compared to Malaysia, by the novice entrepreneurs. The researched continued analyzing the actual influence that culture has on the entrepreneurs' cognitive thinking style. It came to the conclusion that there is a mild relationship between a novice entrepreneurs national culture and its cognitive thinking style. The relationship was not strong enough in order to be considered definite. The main reason for this because there were other variables that also influenced the entrepreneurs cognition.

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Keywords

Novice entrepreneurs, Cultural tightness and looseness, Cognition, Analytical and intuitive information processing mode, culture, the Netherlands, Malaysia, Entrepreneurship, cognitive thinking style, cognitive differences.

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1. INTRODUCTION

In the ever changing business environment, entrepreneurship is still an essential and emerging field of research, since it disperses across continents, cultures and economies (Wright & Marlow, 2012). It is still rather difficult to define entrepreneurship but according to Fillion (2011) a definition of the word entrepreneur should contain six characteristics: innovation, opportunity recognition, risk management, action, use of resources and added value. Even though there are some consistencies in regards to a definition with these six components, an entrepreneur himself can behave, act and think in very different manners. In today's marketplace the smartest companies are not those that necessarily out-produce the competition. Instead, it's the organizations that outthink them. (Bonchek, M. Steele, E. 2015)

One of the best ways to describe how people think is through cognition. Cognitions have been defined as: all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used (Neisser, 1967). One of the theories within cognition is the social cognition theory (Bandura, A., 1986), which includes knowledge structures that are built to improve personal effectiveness and efficiency. Due to the fact that businesses are always looking for new ways of improving their performance, either through being more efficient and effective, it is logical that over past years many researchers started combining and further researching the effect of cognitive thinking styles on entrepreneurs. Herewith, the term entrepreneurial cognition emerged. Entrepreneurial cognition is concerned with the 'knowledge structures' that people use to make assessments, judgements or decisions involving opportunity evaluation, creation and growth (Mitchell et al., 2002).

The main factor that is related to cognition is the different cognitive thinking styles. Researchers have studied and appointed differences in cognitive thinking styles. One of the most widely used differences is between two information processing modes called intuitive-experiential and the analytical-radical thinking styles. "A measure of the extent to which people rely on the two processes can be helpful in understanding receptivity to a variety of communication (Epstein, 1996)." For example, intuitive thinking styles relate more to personal experiences and definite examples, while analytical thinking style involves facts and logical arguments (Epstein, 1996). Because of this distinction, it can be said that there are indeed cognitive differences, but the question of how these differences emerged remains unanswered.

To better understand the role of cognition in entrepreneurship as well as the unique characteristics of entrepreneurial cognition and its various factors, it is important to not only pay attention to the consequences of relevant cognitive variables, but also to the origins and development of such variables (Gregoire et al., 2011). In the hopes of uncovering an aspect that may contribute to the origins of cognitive differences this paper will research the effect of national culture on entrepreneurs cognitive thinking styles. Culture is defined by the GLOBE (2004) project as: "Shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations." This implicates that an entrepreneurs culture may have an effect on what shapes its mind and his thoughts that ultimately lead to its actions, and therefore is an important aspect to measure. Culture can be differentiated in two aspects; 1. corporate culture, 2. national culture. This paper will only take latter into account since its goal is to research the origin of the cognitive differences, and do so by evaluating differences between countries. Gelfand et al. (2011) conducted a research where she studied 33 nations, in which she defined the tight and loose national cultures, and also highlighted some difference between the two types of cultures. This paper also clearly states the connections between culture and how it effects everyday lives, this thus also relates to entrepreneurs and how it might affect them.

1.2 Research Rationale

The purpose of this research is to better understand the origin of "cognitive differences" and therefore study the relationship between an entrepreneurs' national culture and their cognitive thinking styles. This in turn is to better understand the role that cognition plays in entrepreneurship. When taking both cognition and national culture into account, in regards to entrepreneurs, one can see that both of these aspects can have a large impact on an entrepreneur and its organization. Up until now, the literature provides a wide range of information about different cognitive thinking styles, culture differences and their relation to entrepreneurs, but less information is available on the combination of these two aspects in regards to the effect that culture has on the origin of cognitive differences within entrepreneurs. Therefore the following research question has been developed:

"To what extent does an entrepreneurs' national culture influence their information processing modes?"

The following research will give an indication on how entrepreneurs perceive their national culture to be tight or loose and it will indicate their preference for a cognitive thinking style. Lastly, it will also indicate if, and to what extent culture has an influence on entrepreneurs thinking style and if culture is a factor that influences the origin of cognitive differences.

2. LITERATURE REVIEW

This chapter will focus on underpinning the most important and relevant theories regarding the research question. It will include the distinction between cognitive thinking styles as well as a clear differentiation between tight and loose cultures. While explaining the effects that they may have on entrepreneurs.

2.1 Cognitive Thinking Styles

Many researchers have studied and identified thinking styles in various ways. M. Boncheck and E. Steele that published their paper on November 2015 in the Harvard Business Review, conducted a study in which they argued that there are eight thinking styles depending on one's focus (ideas, process, actions, relationships) and orientation (big picture, details). This paper believes that when a person knows their thinking style, they know how to improve a organizations effectiveness when working in teams. Next to this, Sternberg (1997) also identified three thinking styles for his theory of mental self-government. The three thinking styles are judicial (integrative thinking), executive (rule-based thinking), legislative (creative thinking). Sternberg (1997) argues that people's occurrences in life do not only depend on *how well* they think, but also on *how* they think. Kirton (1976, 1991) also created a descriptive measure in which he distinguishes between adaptors and innovators. Lastly, Epstein also researched the cognitive thinking styles and formulated proof for the reliability and validity for a self-report measure for the analytical and intuitive thinking styles. Because this last method has been widely accepted and researched in depth, it will be the most practical for this paper.

During the years 1990-1994 Epstein et al., researched and developed a theory called "cognitive-experiential self-theory" (CEST). CEST proposes that people process information by two parallel, interactive systems: a rational system and an experiential system (Epstein et al., 1996). The experiential/

intuitive thinking style is focused on holistic manners while the rational system is focused on analytical manners. A more in depth differentiation between the two styles can be found in table 1. Next to this CEST also assumes that the intuitive and analytical processing modes are interchangeable.

Table 1: Comparison between intuitive and rational thinking style

Intuitive	Rational
Holistic	Analytical
Automatic, effortless	Intentional, effortful
"What feels good"	"What is rational/logical"
Associationistic connections	Logical connections
Behavior mediated by "vibes" from the past	Behavioral mediated by conscious appraisal of events
Reality in concrete images, metaphors and narratives	Reality in abstract symbols, words and numbers
More rapid processing	Slower processing
Slower and more resistant to change	Changes more rapidly and easily
More crudely differentiated: stereotypical thinking.	More highly differentiated
More crudely integrated	More highly integrated
"We are seized by our emotions"	"We are in control of our thoughts"
"Experiencing is believing"	Justification via logic and evidence

The two systems normally engage in seamless, integrated interaction, but they sometimes conflict, experienced as a struggle between feelings and thoughts (e.g., Denes-Raj & Epstein, 1994). Depending on the circumstances the intuitive or the rational system is preferred by an individual. There are many factors that can influence the decision of which of the two systems should be preferred. Epstein et al. (1996) mentioned factors such as the degree to which the situation is associated with a customary way of responding, the degree of emotional involvement, the degree of experiential dominance and the degree of experience that one has.

Further on, Epstein et al. (1996) created the Rational Experiential Inventory (REI), which consists of two scales. One is the Need for Cognition (NFC), which was adapted from Cacioppo & Petty (1982), that measures the analytical-rational processing. While the other is called Faith in Intuition (FI), (Epstein, 1996), which measures the intuitive-experiential processing. After analyzing the possibilities of the two systems being one bimodal or two unimodal dimensions Epstein (1996) opted to follow the idea that was proposed by CEST, in which behavior is the two processing modes working jointly, and thus used two unimodal dimensions to measure the individual differences. Concluding his research Epstein found that the NFC and the FI scales are reliable, validated and largely independent from one another. They are not total opposites, but two kinds of information processing types.

In addition, many studies tried to better explain the relation between cognition and entrepreneurs. Allinson et al. (2000) argues that the cognitive style that would be the most successful for entrepreneurs is the intuitive thinking style, because the environment that entrepreneurs find themselves in is usually very uncertain. Nevertheless, according to Bird (1988) analytical thinking is necessary for the establishment of formal business plans, opportunity analysis, resource acquisition, and goal setting. Next to this, Olson (1985) argues that intuitive individuals are likely to discover opportunities by observing cues or signals through unfamiliar and unorganized information that is processed in a holistic manner. This is particularly important for identifying an opportunity and acting upon it, which is related to the first stages of a business. On the other hand, Olson (1985) also states that when individuals rely on linear (analytical according to Epstein, 1996), sequential processing of information, this will enable them to evaluate and plan for the new venture. This part is more important for the later stages in the business process. He thus believes that both intuitive and analytical thinking is necessary for being a successful entrepreneur. Due to this "non-agreement" in how both thinking styles influence entrepreneurs it is even more important to understand the origin of cognitive differences in order to better understand the actual role that cognition plays for entrepreneurs.

2.2 Tight & Loose Cultures

It has been long known that there are many cultural differences between countries. Only in the past few decades have scientists begun to move beyond descriptive accounts of cultural differences to empirically assess ways in which national cultures vary (Gelfand, 2011). Gelfand (2006) build upon the distinction of tight and loose cultures that was first introduced by Pelto (1968). Pelto (1968) argues that traditional societies varied on their expression of and adherence to social norms. One of the antecedents of tightness-looseness that Pelto (1968) discussed was the kinship systems, in which he found that societies that have unilineal kinship systems (i.e., descent is traced to either the male or the female) tend to be tight whereas societies that have bilateral kinship systems (i.e., descent is traced to both males and females) tend to be loose (Gelfand, 2006). Next to Pelto (1968) researchers from fields such as psychology (Berry 1966; 1967; Dawson 1967a, 1967b) and sociology (Triandis, 1989; Carpenter, 2000) continued to suggest the importance of the distinction between tight and loose cultures for a better understanding of cultural differences.

Gelfand (2006) continued researching the distinction between tight and loose cultures. Firstly, cultural tightness-looseness was defined as the strength of social norms and degree of sanctioning within societies (Gelfand et al, 2006). The two components of the societal tightness-looseness can be defined as, how clear and pervasive norms are within societies and how much tolerance there is for deviance from norms within societies, respectively (Gelfand et al, 2006). Next to this, a multilevel model of societal tightness-looseness was created. The model combines three levels; individual, organizational and societal levels, and shows what each level consists of and how all levels are connected to one another (Gelfand, Nishii & Raver, 2006) (appendix 1). Because this paper is focused on how culture affects an individuals thinking style it is rather important to give an indication of how the individual level of societal tightness/looseness influences individuals.

Firstly, Gelfand (2006) argues that there is a difference in tight and loose cultures socialization. There is a narrow socialization in tight cultures and broad socialization in loose cultures. The narrow/broad socialization can be found in parents, educational institutions and the criminal justice system. In a narrow socialization the parents and the educational institutions expect children to respect the rules, be to strictly obedience and they monitor the children/students behavior. Gelfand (2011) argues that the tightness/looseness of a culture is reflected in the everyday situations and believes that the higher (or lower) degree of social regulation that exists at the societal level is mirrored in the higher (or lower) amount of self-regulation at the individual level in tight and loose nations, respectively. While parents and teachers in loose cultures encourage exploration and punishments are less harsh. From an individual level perspective

Gelfand (2006) proposes that societal tightness-looseness has cross-level effects on a psychological syndrome of felt accountability. Felt accountability is the subjective experience that one's actions will be subject to evaluation and that there are potential punishments based on these evaluations (Frink & Klimoski, 1998, 2004; Tetlock, 1985). Individuals in tight societies inhabit a social world where they feel a heightened scrutiny of their actions, and expect that violations of norms will be met with stronger punishments as compared to individuals in loose societies (Gelfand et al., 2006).

Knowledge structures, self-guides, regulatory strength and decision-making preference are all part of felt accountability. Knowledge structures indicate what a normal behavior is in a society and is expected to be higher in tight nations since expected behavior is dictated. Self-guides deals with normative behavior in one's self. Being prevention regulatory focus in tight cultures: "the emphasis is on not losing rather than winning or on reducing risk of failure, rather than striving for success" (Wu & Dai, 2001, p.10) while loose cultures will be focused on promotion and achieving goals. Another aspect of felt accountability is the regulatory strength. Regulatory strength was first introduced by Baumeister & Heatherton (1996), in which individuals monitor their behavior and compares it to a normal behavior. It can be said that individuals in tight cultures have a higher regulatory strength. Another important aspect is the decision-making. Regarding decision-making, societal tightness-looseness is expected to relate to preferred ways of gathering, processing, and evaluating information when solving problems, and to the adaptor and innovator cognitive styles (Kirton, 1976), in particular (Gelfand et al., 2006). Adaptors are generally preferred in tight cultures since they are cautious, reliable, efficient, and disciplined (Kirton, 1976; Kirton & Baily, 1991). While it is expected that innovators are better accepted in loose cultures for their originality, risk-seeking abilities. Lastly, Gelfand (2006) also argues that tight and loose cultures cooperate differently with change. Tight cultures are more resilient to change since they prefer stability, while loose cultures are more open to change. As Gelfand et al (2006) stated this is the case because previous research argues that a prevention (versus promotion) focus is negatively associated with change in one's course of action (Liberman, Idson, Camacho, & Higgins, 1999), as well as the fact that fear of errors and mistakes, a mindset that is expect in tight cultures, is also related to resistance to change (Rybowiak et al. 1999; Judge, Thoresen, Pucik, & Welbourne, 1999).

Other than on the individual level Gelfand (2011, 2006) proposed further differences between tight and loose cultures. For example, tight cultures prefer high level of structure compared to loose cultures which prefer less structure. Tight cultures are also higher in self-monitoring in which they tend to have higher control while loose cultures have lower self-monitoring ability and rely on instincts. Table 2 gives a comparison between the tight and loose cultures. Although individuals coming from a specific cultural type is more likely to perceive their cultural type as being better, Gelfand (2011) argues that neither one of them is less dysfunctional or fundamentally unmoral.

Figure 1: Conceptual Framework

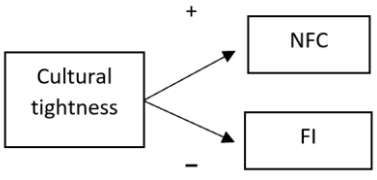

Table 2: Comparison between tight/loose cultures

	Tight culture	**Loose culture**
Social Norms	Expressed very clearly and unambiguously	Wide variety of alternative channels
Deviance behavior	Severe sanctions	High tolerance: lack of formality, order & discipline
Socialization	Narrow	Broad
Self-monitoring	High self-monitoring → Impulse control	Low self-monitoring → Instincts
Decision making	Prevention focus (adaptor)	Risk-seeking (innovator)
Change	Preference for stability	Open to change

2.3 Hypotheses

In order to answer the initial research question a few hypotheses are formulated. These hypotheses take both literature regarding cognition and culture into account. Gelfand (2011) studied 33 nations in which she concluded for each if they have a tight or loose culture. In order to have a better view of whether tight or loose cultures influence cognition it would be the best to compare a tight and a loose culture with each other. According to Gelfand (2011), the Netherlands is perceived to be a very loose culture, with a tightness score of 3.3. While Malaysia is perceived to be a tight culture with a score of 11.8, and is according to Gelfand's study of 33 nations the second tightest country in terms of culture. The firs two hypothesis will determine the extent to which Malaysia our the Netherlands have a tendency to perceive their culture. In this paper it is necessary for there to be a significant difference between the mean tight (Malaysia) and the loose (the Netherlands) culture therefore the first two hypotheses are stated:

"H1: Novice entrepreneurs from Malaysia perceive their national culture to be rather tight."

"H2: Novice entrepreneurs from the Netherlands perceive their national culture to be rather loose."

After determining the cultural tightness-looseness, the research will continue to see whether or not culture actually has an influence on novice entrepreneurs cognitive thinking styles. Tight cultures have a restricted range of appropriate behavior, a high censuring potential, and leave little room for individual discretion (Gelfand 2011). Tight nations are expected to have a higher restriction of behavior that is sought to be appropriate, they also believe that their performance will be evaluated meaning that they have to perform well or they will be punished. Next to this, tight nations are also expected to be prevention-focused and will be more cautious when doing their tasks or taking decisions so that they can avoid any mistakes. According to Gelfand (2011) tight nations also have a higher need for structure and higher self-monitoring ability. Since it is believed that the high amount of social regulation is mirrored in individuals everyday lives, one could also assume that this is the case for entrepreneurs. Especially since Gelfand et al. (2006) expected that the adaptor cognitive style from Kirton (1976) is related to tight nations. The adaptor cognitive style has similar characteristics as the analytical thinking mode from Epstein (1996). This means that entrepreneurs that live in a country that has a tight culture rely more on structure, they have a higher need for analytical facts and logical reasoning since it is believed that facts are a good factor to base e.g. decisions on. With this is meant that the facts are cautiously investigated and thus are

expected to avoid any mistakes. For this reason the third hypothesis has been developed:

"H3: An entrepreneur that comes from a country that is perceived to have a tight culture has a higher degree of an analytical information processing mode."

In regards to the looser cultures, they have less external constraints on individuals, a wide range of behavioral options are allowed and leave room for individual discretion (Gelfand, 2011). Looser countries are expected to have less social regulations, individuals tend to take more risks, less cautious, and in turn more creative with their ideas, and even depend more on their feelings because there is no extreme punishment related to failure. One could also assume that because of the mirroring effect and the connection between the innovator cognitive style, can be compared with the intuitive cognitive style from Epstein (1996), and loose cultures that was proposed by Gelfand (2011, 2006) entrepreneurs also tend to behave in this manner and thus follow an intuitive cognitive approach. Therefore, the following hypothesis has been developed:

"H4: An entrepreneur that comes from a country that is perceived to have a loose culture has a higher degree of an intuitive information processing method."

Since the underlying idea of this paper is to research the origin of cognitive differences. It is also interesting to do so on an internal level. Culture can be seen as an external factor, while gender can be seen as an internal factor. Since woman thought to be nurtures (Schmitt, 2009) and are stereotyped of being more emotional compared to men, one can assume that for this reason women gravitate towards intuitive thinking styles more often. Consequentially, the following set of hypotheses are stated:

"H5$_1$: Men tend to have a higher degree of Need for Cognition."

"H5$_2$: Women tend to have higher degree of Faith in Intuition."

A framework explaining the relation between cultural tightness and the NFC and FI can be seen above in figure 1.

3. METHODOLOGY

It is important to note how the research will be conducted. The methodology will include the data sample, data collection, the research instruments and the data analysis.

3.1 Sample & Data Collection

Data will be collected using a survey. This survey will allow for quantitative data. The main idea is to collect data from novice entrepreneurs in the Netherlands. This is because they have little experience in this specific environment, and thus calls for less factors that can influence their thinking style. Next to this, it is also important to have a data sample that is somewhat equally distributed between males and females as well as the fact that the respondents should have followed a higher education. Even though most of the survey's where filled out in the Twente region, the survey was sent by email to novice entrepreneurs from all over the Netherlands including Amsterdam, Rotterdam and the Hague. Entrepreneurial incubators in different areas of the Netherlands including, Dutch Game Garden, CVJO, The Jamfabriek where contacted in order to collect a higher amount of data. Unfortunately, most of the incubators where fairly busy and hand no time to contribute. Next to this, the KVK in the Netherlands also provided information regarding some startup entrepreneurs in which emails including the survey where sent to them. The novice entrepreneurs, that voluntary agreed to answer the survey, where asked to fill out a 10 minutes survey containing 63 questions, which was created in Google forms. The survey was translated from English to Dutch by a professional translator. This was done in order to avoid misunderstandings from the respondents, to be more reliable for the research, as well as to attract more respondents since the Dutch language is preferred. After collecting data for several weeks it was known that there still where not enough respondents in order to conduct statistical analysis. Firstly, because not enough surveys where filled out and secondly because some cannot be selected for this research since they did not meet the requirements of having a company for maximum of 5 years, they have not followed a HBO/WO education or have had previous businesses. Therefore, the data set was combined with data that was collected in the previous year. This accounted for a total of 92 Dutch respondents that will be analyzed. Next to the Netherlands, data has also been collected, by a fellow classmate, in Malaysia. He collected 140 respondents of which 81 complied with the requirements for this study. In order to analyze the data SPSS 25 will be used.

3.2 Research Instruments

It is really important to have a better understanding of the surveys, therefor this section will explain the surveys in greater detail and also include item-reliability tests in order to test the three, NFC, FI and Gelfand's cultural tightness/looseness scales' internal consistency. This will be done by conducting a Cronbach's Alpha test for each.

3.2.1 Independent Variable: tight-loose cultures

In order to measure the cultural tightness/looseness score from the two countries, the questions conducted by Gelfand et al. (2011) will be used. In total there are six questions that have to be answered using a Likert scale from 1-6 points, with 1 being strongly disagree and 6 being strongly agree. Thus, 1 is linked with characteristics from a loose culture, while a score closer to 6 is characterized with a tighter culture. In her study, the cultural tightness and looseness scores ranges from the lowest and loosest score 1.6 for Ukraine and the tightest score 12.3 for Pakistan. These numbers are clearly different from the numbers used in this paper since the Likert scale only provides numbers between 1 and 6. Nonetheless, it can be assumed that the collective scores from the survey respondents can give an indication whether or not the country has a tendency to perceive their culture to be rather tight or loose. One example of the survey question is "In this country, there are very clear expectations for how people should act in most situations." Next to this, question number four, which is "People in this country have a great deal of freedom in deciding how they want to behave in most situations", is a reversed question and will be reversed coded in SPSS. This will reverse the value of the numbers from e.g. 1 → 6, while after coding they both still have the same value "Strongly Disagree." After recoding this question into a new variable a Cronbach's Alpha test was conducted on the culture scale. A α coefficient is measured with a number between 0 and 1. The higher the coefficient is the better the alliance between the questions, thus the better it shows that all questions are measuring the same factor. The α coefficient was 0,652 (Appendix 3). Even though this number is below the 0.7, which is considered to be the minimum acceptable for a scale (Nunnally, J. C., & Bernstein, I. H.,1994), this number is not very far off and can still be considered as an somewhat acceptable covariance for this research.

Next to this, Ferketich, S. (1991) also suggested that the corrected item-total correlations should be between 0.30 and 0.70. This is the case for all statements except for Gelfand's fourth question that has a score of 0.173. Even though this score is lower than what Ferketich recommended in his paper, the item will remain in the study in order to keep the reliability as high as possible.

3.2.2 Dependent Variable: cognitive thinking style

The dependent variable in this research is the cognitive thinking style from entrepreneurs. This is because this paper focusses on finding the underlying reasons that influence the thinking style of novice entrepreneurs. In order to measure the cognitive thinking style from entrepreneurs the *Need for Cognition* and the *Faith in Intuition* scale as provided by Epstein et al. (1996) will be used. There are in total 10 statements, 5 of which measure the NFC and 5 that measure the FI from the respondents. The statements all have a 5-point scale ranging from 1 being strongly disagree to 5 being strongly agree. From the 5 statements in the NFC scale there are 3 of which should be reversed coded in SPSS. The three statements that where reversed are number 1, 2 and 5. One example of such statement is "I don't like to have to do a lot of thinking." After recoding the 3 variables from the NFC scale into a reverse variable in SPSS a Cronbach's alpha was conducted for the two scales in order to measure the reliability. The α coefficient for the NFC scale was 0.630 (appendix 4). This is the lowest reliability score between the 3 scales. One of the first aspects that can be done to increase the Cronbach's alpha is to check the "if item deleted" row. In this case, even though the coefficient is low, there is no other option after item deleted that shows a higher coefficient. This implicates that all the statements should stay, and that it is necessary to analyze the actual data in order to see whether there are outliers. Overall, the coefficient is indeed below 0.7 but it is not drastically lower which can thus assume that the statements do, to some extent, measure the same underlying concept.

Next to the NFC scale, the FI scale was also tested regarding its item and reliability analysis. From the 5 statements that are targeted to measure the FI, none of them should be reversed and thus does not require to be recoded. The α coefficient for this scale was the highest overall with a score of 0.817 (appendix 5). This score can be considered as a good coefficient, that shows high internal consistency between the statements.

3.2.3 Control Variables

In order to check whether or not the survey respondents actually qualify for this research, control variables have been added to the survey. In addition, some control variables also help to test if other variables have an influence on the dependent variable, cognition. To test this a correlation test was conducted in SPSS (appendix 9.2). The most important control variables in this paper are age, gender, did_you_take_entrepreneurial_courses and years_entrepreneur. The entrepreneurs age and gender is chosen because these are both internal aspects that potentially can be a source for the origin of the cognitive differences. Other than that, entrepreneurial courses and years_entrepreneur are chosen because they both teaches entrepreneurs something new, either through experience or through theories and books.

3.2.4 Exploratory Factor Analysis

Next to the Cronbach's alpha the Factor Analysis was also conducted. This is to have a better understanding of the variance/covariance between the variables cognition and culture. After conducting this test it can be explained whether or not the statements are related as expected. Next to this, the factor analysis also measures the validity for the tests. In order to conduct this test the data from the Dutch and the Malaysian respondents have been merged. All 10 statements from Epstein's REI scale, which is 5 statements for NFC and 5 for FI, will be measured simultaneously. After conducting the test in SPSS the first output was the correlation matrix (appendix 10).

The correlation matrix shows that the first 5, NFC, statements are all moderately to highly correlated with each other except for the fifth statement in relation to the third and fourth one (0.087 and 0.082 respectively). On the other hand the 5 FI statements all have strong correlations with each other. Notably though, is the fact that most NFC and FI statements have a weak strength, negative correlation with each other, although only six of the 25 correlations are statistically significant (appendix 10). Next to this, it can also be seen that the last FI statements does significantly correlate with the third and fourth NFC statements. Lastly, it is also important to look at the determinant level related to the correlation matrix. The determinant should be higher than 0.00001, if this is not the case the scales are not correlated enough with each other and does not meet the requirements to perform a good factor analysis. In this case the determinant is 0.77, this thus is a high amount and allows for reliability of the factor analysis. Next to the correlation matrix, the KMO (appendix 10.2) was reviewed to also check whether the scales are suitable to perform the factor analysis test, thus sampling adequacy. The KMO has a significant value of 0.763 which is higher than the 0.05 alpha, which means that the data can be used to perform the test. The Bartlett's test is also significant, this means that there are at least two items that are highly correlated with each other.

The final aspect regarding the exploratory factor analysis is the matrix. It is expected that there would be two factors, one for NFC and one for FI, but the total variance explained shows that there are actually 3 factors that account for ≈62,2% of the components (appendix 10.3). After finding these values, the factor analysis was run again in order to see which statements fall underneath which factor. The result can be seen in the rotated component matrix. All five FI statements are in the first factor, which states that they are highly correlated. All the reversed NFC statements are in factor two, while the non-reversed statements are in factor three. In factor three also the last question can be seen with a low relation. This can be explained due to the correlation that was previously seen in the correlation matrix.

3.2.5 Regression Analyses

3.2.5.1 Outliers Tests

Before analyzing the actual regression analysis it would be helpful to first search for outliers within the data sets. To do this the mahalanobis test was conducted. As a result from the new variable MAH_1 it can be seen that three respondents, ID: 201, 241 and 285, have a score of 8 or higher, which seems much higher compared to the other scores. Therefor these seem like an outlier. In order to test whether or not they actually are an outlier a new variable measuring their significance value using the cumulative chi square will be computed. If a respondent is an outlier the p-value would be lower than 0.001, in this case all three respondents have a score higher than this (p=0.00318, p=0.0458, p=0.0458) and therefor are not considered an outlier. Next to the mahalanobis test, Cook's distance will also be used to test the influence in the regression model. Cook's distance is a measure of how much influence a predictor variable has on the predicted value of the outcome variable (T. Grande, 2015). It shows how the y-values would change if a particular respondent is left out of the data set. When combining the means score for FI and NFC the test shows that there are two respondents that seem to be an outlier, respondent with ID 201 and 110 which are both Dutch respondents. A scatterplot has been conducted in order to have a better overview of the scores (Appendix 15). According to Cook's distance these two respondents are an outlier, but for the sake that the two dependent variables have been combined, as well as the fact that the mahanalobis test does not depend on the depended variables in order to have an output the mahanalobis test will be used for the research. Thus, there are no significant outliers in this data set.

3.2.5.2 (Moderated) Multiple Regression

In order to better understand the relation between the variables a multiple regression will be conducted. When conducting the regression analysis in SPSS, the FI is set as the dependent variable. This is because the correlation matrix shows a significant correlation between FI and cultural tightness and looseness. The FI and NFC variables will not be combined into one dependent variable, cognition, because this will be less specific and will not give a clear indication as to which, NFC or FI, exactly the independent variables have an effect on. While at first all 4 control variables are set as the independent variable. After conducting several regressions using blocks, it was seen that no control variable significantly increased the regression except for the variable did_you_take_entrepreneurial_courses. For this reason only this variable will be further used in the (moderated) multiple regression analysis. The regression analyzes the question "if you increase the cultural tightness & the control variable by 1 point, how much would that affect the intuitive thinking aspect of an entrepreneur." While conducting the multiple regression analysis a moderator analysis will also be carried out. According to Baron and Kenny (1986) a "moderator variable" is a qualitative or quantitative variable that affects the direction and/or strength of the relationship between the independent variable and the dependent variable. The moderator will be carried out by firstly standardizing both mean_culture and the control variable. After, a new variable was computed by multiplying the Z-scores, mod_culture_ent, which will be included in the final regression analysis (appendix 7).

Firstly, the multicollinearity assumption will be checked. This will be done by analyzing the coefficient table which indicates the VIF numbers. According to Hair et al. (1995) the VIF numbers should be below 10, but ideally leaning more towards 1. A lower number indicates that there is a low correlation among the independent variables and thus is better to understand the effect that each have on the dependent variable separately. In this case all VIF's are well below 10 and near 1, with the highest being a VIF of 1.033.

Secondly, the multiple regression itself will be analyzed. It can be seen that the effect that cultural tightness and looseness has on FI is significant with a score of p=0.020. This indicates that cultural tightness and looseness does indeed have an effect on FI in novice entrepreneurs. This is as expected since the correlation matrix also indicates it. In addition, it can be seen that the r= 0.178, with an adjusted R-squared of 2.3%. This is a very small number that explains that cultural tightness and looseness actually only has a very low effect on FI. Next the this score, the other independent variable, did_you_take_entrepreneur_courses, is also seen to have a significant influence on FI with a value of p=0.001. While the r=0.313, with an even higher adjusted R-squared of 8,7%, and thus increased the effect of the independent variables on FI with 6.6%. The intercept, the value of y when x is zero, is 3.45. this means that when a novice entrepreneur has no cultural tightness/looseness score they would have a mean value of 3.45 for intuitive thinking style. The unstandardized beta is 0.203 fir cultural tightness and looseness while it is -0.355 for did_you_take_entrepreneur_courses, which means that an increase in one unit of cultural tightness/looseness would increase a novice entrepreneurs preference for the intuitive thinking style by 0.203 as well as decrease it with 0.355. Therefore, the following regression equation is build: y= 3.45 + 0.203x + -0.355x (appendix 7). This regression is also shown with a scatterplot. In order to compute the scatterplot the unstandardized predicted value of both independent variables was computed and then plotted against the FI. The R-squared is according to the coefficient table of 9.8%, as said previously the adjusted R-squared is set at 8.7%. This number either way is quite low and thus indicates that neither of the two independent variables can be seen as the primary indication of an intuitive thinking style.

Lastly, the moderation analysis will also be conducted. This analysis will give an indication of whether or not the variable did_you_take_entrepreneur_courses, moderates the relation between cultural tightness/looseness and the FI. From the coefficient table in appendix 7 it can be seen that the moderator actually slightly decreases the adjusted R-squared to 0.086. This is usually the case when the variable, in this case the moderator, occurs by chance. While viewing the significant level it can also be seen that the moderator variable is not significant (p=0.380). From this it can be concluded that the variable did_you_take_entrepreneur_courses is not a moderator between the variable FI and the cultural tightness/looseness.

3.3 Data Analysis

3.3.1 Normality Tests

One of the first tests that was conducted in order to analyze the hypotheses is the Shapiro-Wilk test. This test will give a clear indication to whether or not the data is normally distributed. This is important to figure out, in order to know which tests should be conducted later in SPSS. The alpha will be set at α=0.05, in this case the null-hypothesis states that there is no significant difference between a normal distribution and the distribution of the data set. If the p-value is lower than 0.05 the hypothesis will be rejected, and thus conclude that the data collected is significantly different from a normal distribution. Before conducting the Shapiro-Wilk test, the average of the NFC, FI and Gelfand's tightness/looseness scale will be computed into a new variable. For the Netherlands the Shapiro-Wilk test gives a p-value of p<0.001 for the NFC, a p=0.003 for the FI scale, and a 0.031 for the tightness/looseness scale (appendix 6). For all these three scores are lower than the alpha of 0.05, they should all be rejected according to the Shapiro-Wilk test. This would imply that none of these values are normally distributed. As a second opinion QQ-plots where plotted for all three data sets separately. These plots can be found in the appendix 6. Based on the QQ-plot for NFC it can be seen that for the first 3 dots the data is fairly off regarding the normal line, but soon it follows the normal line nearly perfect. For this reason it can be said that this data still is normally distributed. This also is accountable for the FI and the tightness/looseness data sets. They both align with the normal linear line in a way that is assumed to be normally distributed. Next to the Dutch respondents, the normality for the Malaysian respondents was also analyzed and the p-values scores where p=0.55 for NFC, p=0.248 for FI and p=0.148 for tightness/looseness score respectively. For the Malaysian data all p-values are above the alpha of 0.05 and therefor are all assumed to be normality distributed according to the Shapiro-Wilk test.

3.3.2 (Partial) Correlations

In addition to testing the normality of the data set, the relation between the variables will also be analyzed. Firstly, the bivariate correlation test will be conducted (appendix 9). This is important to see to which degree there is a relation between the two variables. The correlation will be tested using the Pearson test, since the data is assumed to be normally distributed. Next to this, the test will be conducted in 1-tailed. This is because hypothesis 3 and 4 state that the cognitive thinking style will be higher or lower depending on the culture rather than either intuitive or analytical thinking style. The most important aspect is to see too which extent culture influences cognitive thinking styles. How "low" it influences it, it not the priority concern.

The correlation analysis indicates that there is a positive correlation between age and NFC (r=0.200, p=0.04) with a correlation coefficient that is on the lower end, while there is no significant correlation between age and FI (r=0.026, p=0.307). The correlation between age and NFC indicates that the older a person is, the more they tend to prefer analytical thinking mode. In addition, there is a significant correlation between gender and NFC (r= -0.191, p=0.006), the correlation coefficient is from a negative nature and the strength is weak. While there is no significant correlation between gender and FI (r=0.086, p=0.131). The negative correlation between gender (male=1, female=2) and NFC assumes that males tend to prefer using their analytical processing modes. Next to this, there is a significant negative correlation between both NFC and FI with the variable did_you_take_entrepreneurial_courses, r= -0.273, p<0.001, r= -0.240, p=0.001, respectively. The values where coded with 1=Yes and 2=No. Therefore, when a respondent takes entrepreneurial courses they tend to use their analytical and their intuitive thinking styles less. Lastly, there is a positive correlation between years_entrepreneur and NFC (r=0.150, p=0.024) with a correlation coefficient that is positive and rather low of strength, while there again is no correlation between years_entrereneur and FI. This correlation suggests that the more years a respondent is an entrepreneur the more they lean towards their analytical processing modes. Because all 4 control variables correlate to NFC a partial correlation will be conducted. This will measure the correlation between the independent and dependent variables while excluding the correlation of the 4 control variables. The partial correlation indicates that there is no significant correlation between the NFC and the FI scales (r= -0.050, p=0.260), nor is there a significant correlation between NFC and the tightness/looseness score (r= -0.089, p=0.127). On the other hand there is a positive, significant correlation between FI and cultural tightness/looseness (r=0.185, p=0.008).

3.3.3 Hypotheses Tests

In order to test the 5 hypothesis independent t-tests will be used. Before conducting the t-test its assumptions should be met, therefor the Levene's test will also be conducted in order to firstly see whether there is homogeneity between the variances. The independent t-test fits with this data and hypotheses because it will be comparing the means of the independent and the dependent variable. It is also important to note that for hypotheses 3 and 4 the test will be 1 tailed test, because these hypotheses do not indicate one factor over the other, but rather indicate a higher or lower degree of a specific cognitive thinking style. In this case it is not expected that a person is either intuitive thinking or rational thinking style. It is expected that an entrepreneur has a higher degree of preference for a specific thinking style. Whether how low the degree of the other thinking style is, is less important. A 1-tailed test is also used due to the fact that it provides more power to detect an effect.

4. RESULTS

4.1 Descriptive Statistics

Analyzing the descriptive statistics (appendix 8) of the data, it can be said that from the 92 Dutch respondents 58 (67%) are male and 34 (37%) are female (appendix 2). This amount is somewhat uneven, but can still be used. The average age from the Dutch respondents is around 40 years with a $\sigma = 12.9$ years. Out of the 81 Malaysian respondents 26 (32.1%) is male 53 (65.4%) is female, while 2 (2.5%) identified themselves as 'other'. Out of the 81 respondents 79 mentioned their age and turned out with an average age of around 32 years and a $\sigma = 6.5$ years. Although 81 respondents comply with the requirements for this study, there is 1 person that did not respond all the tightness/looseness questions. For this reason there will be 80 respondents to measure the cultural tightness/looseness in Malaysia. Next to this, it can be said that when combining the Dutch and the Malaysian respondents there is a total of 84 male and 87 female respondents.

4.2 Hypotheses Results

4.2.1 Hypotheses 1 & 2

H1: Novice entrepreneurs from Malaysia perceive their national culture to be tight.

H2: Novice entrepreneurs from the Netherlands perceive their national culture to be loose.

It is important to see whether there is a significant difference between the Malaysian and the Dutch cultural tightness and looseness scores. This will be done by conducting an independent t-test. Firstly, the Levene's test was analyzed. This test has a null hypothesis that states that there is no difference between the variance of the first group and the variance of the second group. The variances should be the same, thus the test should be non-significant. In this case the p-value is 0.769 which is greater than 0.05 which implies that the variances are not significantly different, thus equal variances are assumed. Since the homogeneity of variances assumption is met, it is time to analyze the independent sample t-test. The independent t-test is based on the null hypothesis that both of the means, thus from the Netherlands and Malaysia, are the same. Regarding this study, the novice entrepreneurs in Malaysia scored a mean, and thus a tightness/looseness score of ≈ 4.2 (Appendix 11), while the mean culture, and thus the tightness/looseness score of the Netherlands was a 3.9. The t-test has a result of t(170)= 2.66, p=0.009. This can be interpreted as that there indeed is a significant difference between the mean cultural tightness and looseness scores of the Netherlands and Malaysia. In other words, it can be said that the novice entrepreneurs in the Netherlands have a tendency to perceive their culture to be looser compared to the Malaysian entrepreneurs. Therefore we reject the null-hypothesis, and support the alternative hypotheses, H1 and H2, that states that there is a significant difference between the two means. For this reason, the next hypotheses and further research will be based on the idea that the novice entrepreneurs in the Netherlands have a tendency to perceive their national culture to be to some extent looser, while the novice entrepreneurs in Malaysia perceive their culture to be rather tight.

4.2.2 Hypothesis 3

H_0: Entrepreneurs from a tight and a loose culture have the same degree of analytical information processing mode.

H3: An entrepreneur that comes from a country that is perceived to have a tight culture has a higher degree of an analytical information processing mode.

Epstein (1996) had difficulty in knowing whether or not he NFC and the FI scales where internally related or independent of each other. For his paper the results where that the two scales where independent from each other. Therefore, a correlations test was analyzed again in order to see whether the two scales are related or independent. This is done in order to know which hypothesis tests should be conducted for this particular hypothesis. The correlations matrix (appendix 9) shows a correlation of -0.044 with a significance level of 0.283. This shows a very small, negative correlation between the two scales. Comparing the level of significance to the alpha of 0.05 it can be seen that the correlation is not significantly different, and thus it just occurred by chance. This implicates that the two scales are independent from one another and therefor the independent t-test will be used to test the hypothesis 3 & 4.

According to this hypothesis it is expected that the novice entrepreneurs in Malaysia tend to prefer analytical information processing mode. The analytical processing mode was measured with Epstein's *Need for cognition* (NFC) scale. Therefor, it is expected that the mean score from the NFC in Malaysia is higher compared to the NFC score of the Netherlands. After computing a independent t-test (appendix 12) it is shown that the mean NFC score of Malaysia is ≈ 3.5, while the NFC mean score for the Netherlands is ≈ 4.1. These numbers are actually the opposite from what was expected. The Levene's test has a significance level of 0.097, which is significant and thus equal variances are assumed. The test statistics are the following; t(171)=5.453, p> 0.001. The test indicates that the means are significantly different from each other and therefore reject the null hypothesis, and accept the alternative hypothesis saying that there is a significant difference between the two even though it is not in the expected direction. The test implicates that the novice entrepreneurs from the Netherlands are more keen to use their analytical processing modes, while the novice entrepreneurs in Malaysia do not lean towards this thinking style as much.

4.2.3 Hypothesis 4

H_0: Entrepreneurs from a tight and a loose culture have the same degree of an intuitive processing mode.

H4: An entrepreneur that comes from a country that is perceived to have a loose culture has a higher degree of an intuitive information processing method.

Hypothesis 4 states that novice entrepreneurs from loose cultures, The Netherlands, tend to prefer to use their intuition for information processing. Intuition is measured with the *Faith in Intuition* scale, which its mean is used to perform the independent t-test. It is expected that the Netherlands will have a higher mean score compared to Malaysia. The data test meets the expectation since the mean score for the Netherlands is 3.9217, while for Malaysia its 3.6370. Continuing with analyzing the independent t-test, the Levene's test has a significance value of 0.025 (appendix 13). This value is lower than the set alpha of 0.05, and therefor equal variance are not assumed. The small significant value can also be explained by the fact that the standard deviations of the two are not similar, 0.58023 for the Netherlands compared to 0.70506 for Malaysia. The test statistics are; t(155.304)= 2.876, p= 0.005. With this it can be said with 95% confidence that there is a significant difference between the mean score that novice entrepreneurs in the Netherlands lean more towards their intuitive thinking modes compared to the Malaysian novice entrepreneurs. Consequentially, we reject the null hypothesis, and accept the alternative hypothesis 4 that states that there is a significant difference between novice entrepreneurs from Malaysia and the Netherlands regarding their need for intuitive processing mode.

4.2.4 Hypothesis 5

H_0: There is no difference between men and women degree of NFC nor FI.

$H5_1$: Men tend to have a higher degree of Need for Cognition.

$H5_2$: Women tend to have higher degree of Faith in Intuition.

For these set of hypotheses it is important to compare the differences between the male and the female responses. The combined total for male respondents is 84 and for the female respondents is 87. The number of data is very equal which is good for analyzing it. An independent t-test will be conducted, because the female and the male respondents are independent of each other. Even though both groups answered the same questions, the questions have not been answered twice in order to perform a paired t-test. The Levene's test (appendix 14) for both male and female regarding the NFC and the FI measures are significant with a level of p=0.076 and p=0.326 respectively. The standard deviations of the two are fairly similar which also indicates that equal variances should be assumed. Meaning that the distribution for the male and female group are fairly similar. The mean score for NFC is 3.9619 for male, while for females the score is 3.7172 the standard deviation is 0.66331 and 0.55031 respectively, this difference explains why the significant level of the Levene's test is on the lower side. The test statistics are the following; t(169)=2.629, p=0.009. From this it can be said that the difference in the male and female NFC scores is significantly different. From the means it can be seen that males scored higher for NFC and thus it can be concluded that men indeed tend to have higher degree of *Need for Cognition*, and tend to think using their analytical processing modes more often then woman do. For this reason we reject the null-hypothesis that states there is no difference between the two, and accept the alternative hypothesis 5_1.

When analyzing the outputs regarding the FI for males and females the mean scores are 3.7333 and 3.8368 respectively. While the test statistics are; t(169)= -1.029, p=0.305. These result imply that there is not a significant difference between the mean male and females scores in the *Faith in Intuition* data, and therefor it cannot be concluded that females tend to have a higher need for intuition. Consequentially, the alternative hypothesis 5_2 is rejected.

5. DISCUSSION

This research aimed to provide further insights into the origins of the cognitive differences from novice entrepreneurs by analyzing the effect that cultural tightness/looseness and even gender may have on the entrepreneurs. In order to test both tight and loose cultures' effect on cognition, the Netherlands was analyzed as having a higher characteristics of a loose culture while Malaysia was analyzed as a rather tight culture. The first findings where related to comparing the data set and Gelfand's proposition of the cultural tightness/looseness of these two countries. It can be said that the difference between the two countries tightness/looseness scores is not as large as in Gelfand's 33 nation study (2011). The outcome from Malaysia was indeed tighter (score 4.1), but not as tight as in Gelfand's study (11.8), while the Netherlands was looser (3.9) but also not as loose as in her scale (3.3). Nevertheless, there still was a significant difference between the two that fulfilled the assumption that Malaysia's culture is perceived as tighter than the Netherlands.

When inspecting the Cronbach's alphas it can be discussed that the NFC and the cultural tightness/looseness is on the lower end. This may be due to respondents answering the questions without fully reading or understanding them or because the scale is much shorter than the original scale from Cacioppo & Petty (1982). Although, the shorter scales were indeed validated by Epstein (1996). He also noted that the more data there is to be researched, the higher the Cronbach's alpha will be. Therefor this may be a reason why the Cronbach Alpha was lower in this research, since in his paper he had nearly 1000 respondents. Because of this, it can be said that the REI scale might be less reliable in circumstances with less survey respondents. On the other hand Epstein (1996) did extensively measure and test the validity and the reliability for the REI scale, which is why this paper still assumed the REI scale to be both reliable and validated.

In addition, there was also some interesting aspects that arose after conducting the factor analysis. Instead of having two factors, one for NFC and one for FI as expected with the REI scale, there were 3 factors. Factor one that accounted for all 5 FI statements, factor two that accounted for statements 1, 2 and 5 that are all reverse coded, and factor 3 that accounted for

statements 3 and 4 that are the original non reverse coded statement. It can be said that the two sets of NFC statements are in contrast with what Epstein (1996) found in his research. His NFC scale of 19 statements where all highly correlated and thus within the same factor. A reason for this contrast may be because the NFC scale that was used in this research only has 5 statements, this reduced clarity of what exactly is being asked. From the correlation matrix (appendix 10) it can be seen that statement 5 is the one that correlates less with statement 3 and 4. Therefore, a factor analysis has been conducted excluding this statement, which then concluded that there remained only 2 factors. This thus concludes that the reverse coding has no direct effect on the correlation within the scale, but that the fifth statement on its own was misinterpreted or misunderstood by the respondents, which led to a third factor that also included the first and second statement.

The correlations also had some interesting results. Specifically, the correlation between NFC and years of being an entrepreneur that had a positive correlation. This correlation implicates that the more years of experience an entrepreneur has the more he/she leans towards using the analytical processing mode. This is in line with Olson's (1985) assumptions. He mentioned that the intuitive processing mode performs better in the starting stages of a business processes since it involves being creative and acting on opportunities, while analytical processing mode functions better in the later stages of the business process since one should look at the facts and trends to continue to perform better each time. On the other hand the correlation between did_you_take_entrepreneur_courses and NFC as well as FI both came out significant and negative. This is also unexpected since it implies that when an entrepreneur takes entrepreneurial courses he/she is less likely to use its analytical or its intuitive thinking mode. This might imply for another aspect that was unaccounted for in this paper.

Next to this, it was also notable that NFC correlated with all control variables on a significant value, while FI did only with one of the controlling variables. On the other hand, FI did correlate with the cultural tightness/looseness while NFC did not significantly correlate with it. This raised the expectation that maybe the NFC and the FI scales actually have different sets of variables that influence them separately. Epstein (1996) also did note that both of the scales are independent from one another, which may be an indication that the independent variables that influence each are also separate.

Regarding hypothesis 3, the results were fairly surprising. This is because the test was significant in the opposite direction that was expected. Malaysia's novice entrepreneurs turned out to have a mean score lower on preferring their analytical thinking style, while it was expected that the Netherlands would have scored lower. One explanation for this could be because the Dutch respondents are older, average 40 years, compared to the Malaysian respondents, average 32 years. This is because there was also a positive correlation between the NFC and age. The older one gets the more they tend to prefer analytical thinking rather than the intuitive. Another explanation, is due to the correlation between NFC and years_entrepreneur. This correlation implicates that more years a person has been an entrepreneur the more they tend to rely on their analytical thinking style. The mean years a Dutch respondents has been an entrepreneur is 3.8 years while for the Malaysian entrepreneurs its 2.6 years. There is a significant difference between the two, which may explain why Malaysia actually scored lower in mean NFC, than the Netherlands.

For hypothesis 4 it can be said that the outcome was as expected. Malaysia scored lower on the mean score 3.6 while the Dutch entrepreneurs scored a 3.9. The lower the score the less the entrepreneurs agree with the statements regarding the FI scale and thus the Malaysian entrepreneurs tend to use their intuitive thinking style less. It is particularly notable that the Netherlands scored higher for both NFC and FI. This suggests and is in line with Epstein's (1996) CEST theory that believes that the analytical and the intuitive thinking style are interchangeable.

The last hypothesis is concerned with the differences in gender regarding their preference for either intuitive or analytical thinking styles. The expectation was met with hypothesis 5_1, while hypothesis 5_2 was rejected due to a non-significant difference in means. Even though hypothesis 5_1 was accepted, it is still questionable whether or not gender has an actual influence on a persons preference for either thinking style. This is because in Epstein's study he at first also received the results that male prefer NFC and female FI, but after conducting the research on a larger sample this distinction was not found anymore. This could mean that if this particular research was done on a larges sample the significant difference between the two would also disappear.

6. CONCLUSION

This paper was aimed to better understand the cognitive differences between entrepreneurs by analyzing the effect that culture has on it. Therefore it focused on answering the following research question: "**To what extent does an entrepreneurs' national culture influence their information processing modes?"**

It can be concluded that novice entrepreneurs from the Netherlands perceive their culture to be looser compared to novice entrepreneurs from Malaysia. Even though the perfect cut off to whether any country is actually tight or loose, in the Likert scale, is still missing from the papers, the significant difference between the two countries means was sufficient in order to conduct the further tests. These test results shows that the two main hypotheses, H3 and H4, are both accepted and thus indicate that the difference in cultural tightness and looseness does have an effect on the overall preference novice entrepreneurs have regarding their information processing modes.

On the other hand, it was also seen that there was no significant correlation between analytical processing mode (NFC) and the cultural tightness/looseness, while there was a weak strength but significant correlation between intuitive thinking style (FI) and cultural tightness/looseness. The weak correlation was further enhanced by the very low R-squared of 3.2% from the regression analysis and even lower adjusted R-squared of 2.6%. After including the variable did_you_take_entrepreneur_courses the adjusted R-squared did increase to 8.7%. Although, this can still be seen as a very weak effect on the intuitive thinking style. From this it can be concluded that neither of the independent variables are the primary source of impact on the dependent variable FI. Both of these results would implicate that there is no large enough relation between an entrepreneurs degree in intuitive or analytical information processing and the cultural tightness/looseness score in order to say that they are the main source of impact.

Next to this, it can also be said that there was a slightly questionable Cronbach's alpha for NFC and cultural tightness/looseness, which may be a reason for the low correlations between NFC and FI in regards to cultural tightness/looseness.

Due to these results it can be said that cultural tightness/looseness has a mild influence on novice entrepreneurs information

processing modes. This mild influence should be further investigated in order to have a certain answer.

Nonetheless, there where interesting findings as to the differences in aspects that each influence the NFC and FI separately. The control variables where a clear indication to this, as well as the fact that only FI correlated with cultural tightness/looseness.

On the other hand, it is still believed that cognition plays a vital role for entrepreneurs. It defines how entrepreneurs think, act on opportunities and differentiate themselves from others. With this mild relationship between culture and cognition it is rather difficult to know exactly what the role of cognition is for entrepreneurs.

7. LIMITATIONS & FUTURE RESEARCH

Regarding the research, it can be said that multiple limitations where encountered. Firstly, there was a really low response rate regarding the surveys. There might be two reasons for this; one of which is that the data collection via email was not the best. A lot of emails where sent out to novice entrepreneurs as well as emailing and calling multiple business incubators, but since there was no face-to-face contact at first, the survey response remained very low. Incubators where too busy, and said to have already filled out other surveys due to the fact that this is the graduation period. Personally, I also believe it may be due to favoritism to a specific area. Entrepreneurs in the Twente region where more keen to answer the survey since the have been to the university or just because they want to support their own region. This accounts for the fact that the data collection was not as dispersed as was intended to be. After attending an entrepreneurial conference more surveys where answered, but there still were not enough novice entrepreneurs. I encourage future students to try and contact novice entrepreneurs face-to-face in order to ease the data collection period. Another idea would be to have multiple bachelor circle students to conjointly perform their data collection in one country.

Secondly, the survey may have also been too long and not specific enough. Because the survey was part of a larger group of students, everyone collected data for four different topics and the control variables. A survey that is too long would notably decrease the response rate. Next to that, I also received several questions from the entrepreneurs regarding the understandability of the survey. They could not understand how all the questions where related or wanted more clarification about which country they should answer for Gelfand's survey, or if the questions where related to the people in their country or their company. This misunderstanding may have also been a reason for a low Cronbach's alpha of NFC and cultural tightness/looseness. This would also help in achieving a more reliable data set that may have predicted a significant correlation between the independent and the dependent variables. Therefore, I would also encourage future students to make the survey as clear as possible.

Next to the low response rate, it is also important to note that data has been collected by novice entrepreneurs only. It has been widely talked about that entrepreneurs differ a lot from other people in regards to many perspectives. Therefore, it is questionable whether the results from this test can be generalized for the whole Dutch/Malaysian population. This may have also been a reason why the cultural tightness/looseness results differ from Gelfand's 33 nation study.

Alongside, it would have also been more interesting and a better analysis could have been performed if more cultures where involved. This is truly a time constraint which is inevitable in the time frame bachelor students have for the thesis. Nevertheless, it is still possible if combining data from previous students with data from a new country. Visiting a country abroad would be beneficial for this study. On the same hand, this is also a good idea for future research. From the previous research conducted on these topics most of them did not find a country that is truly as loose as it seems to be in Gelfand's study. It would be interesting in analyzing a country very loose compared to all the previous tight ones.

Another future research recommendation is regarding the cognition. From this study it was seen that NFC correlated a lot with gender, age, years of being an entrepreneur and following entrepreneurial courses, thus the control variables, while FI did not. This may be an indication that NFC and FI are affected by two different sets of variables.

One aspect that might also be interesting to research is the idea that the intuitive thinking style and the analytical thinking style are not completely separate from one another. Meaning that a person can choose when he should use its intuitive or its analytical information processing mode in order to be more effective or even successful. Many researchers including Epstein and Olsen suggest that both of these thinking styles have their benefits and are interchangeable.

Lastly, it is also very interesting in having a better understanding of how choosing or combining between the analytical and the intuitive thinking style might relate to success. Some researchers believe that one or the other thinking style is better for being an entrepreneur and it might lead to higher success rate. It would be interesting to have a better understanding if this is actually the case or if the combination of the two thinking styles is superior. Because it is inevitable that some entrepreneurs perform better and are more successful at being entrepreneurs.

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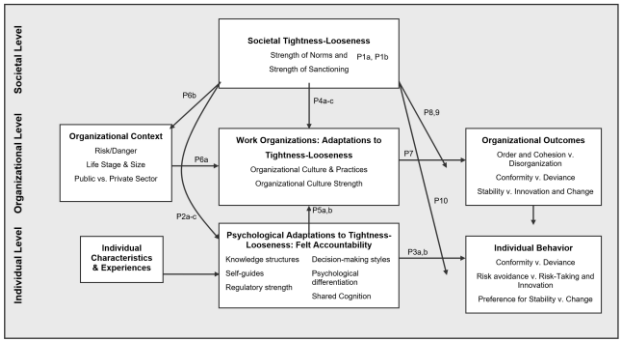
10. APPENDIX

Appendix 1: A Multilevel perspective on cultural tightness/looseness (Gelfand et al 2006).



Appendix 2: Male VS Female respondents

Gender

Country			Frequency	Percent	Valid Percent	Cumulative Percent
The Netherlands	Valid	Male	58	63.0	63.0	63.0
		Female	34	37.0	37.0	100.0
		Total	92	100.0	100.0	
Malaysia	Valid	Male	26	32.1	32.1	32.1
		Female	53	65.4	65.4	97.5
		Other	2	2.5	2.5	100.0
		Total	81	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	84	48.6	48.6	48.6
	Female	87	50.3	50.3	98.8
	Other	2	1.2	1.2	100.0
	Total	173	100.0	100.0	

Appendix 3: Item-and reliability analysis: Culture

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.652	.662	6

Item Statistics

	Mean	Std. Deviation	N
Gelfand_1 There are many social norms that people are supposed to abide by in this country.	4.48	1.089	172
Gelfand_2 People agree upon what behaviors are appropriate versus inappropriate in most situations in this country.	4.20	1.184	172
Gelfand_3 In this country, there are very clear expectations for how people should act in most situations.	4.23	1.028	172
Gelfand_4 People in this country have a great deal of freedom in deciding how they want to behave in most situations.	3.24	1.292	172
Gelfand_5 In this country, if someone acts in an inappropriate way, others will strongly disapprove.	4.15	1.168	172
Gelfand_6 People in this country almost always comply with social norms.	3.94	1.088	172

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Gelfand_1 There are many social norms that people are supposed to abide by in this country.	19.76	13.613	.300	.189	.637
Gelfand_2 People agree upon what behaviors are appropriate versus inappropriate in most situations in this country.	20.03	11.601	.522	.302	.554
Gelfand_3 In this country, there are very clear expectations for how people should act in most situations.	20.01	12.579	.490	.328	.574
Gelfand_4 People in this country have a great deal of freedom in deciding how they want to behave in most situations.	21.00	13.883	.173	.067	.692
Gelfand_5 In this country, if someone acts in an inappropriate way, others will strongly disapprove.	20.09	12.623	.388	.201	.607
Gelfand_6 People in this country almost always comply with social norms.	20.30	12.411	.472	.249	.577

Appendix 4: Item and reliability Analysis: NFC

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.630	.642	5

Item Statistics

	Mean	Std. Deviation	N
Epstein 1 REV	4.13	.946	173
Cog Epstein 2 REV	4.27	.827	173
Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.	4.08	.902	173
Cog Epstein4 I prefer complex to simple problems.	3.34	1.025	173
Cog Epstein 5 REV	3.38	1.122	173

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Epstein 1 REV	15.05	6.201	.505	.332	.515
Cog Epstein 2 REV	14.92	6.668	.497	.338	.530
Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.	15.11	7.145	.315	.173	.608
Cog Epstein4 I prefer complex to simple problems.	15.85	6.663	.334	.197	.602
Cog Epstein 5 REV	15.81	6.458	.309	.166	.622

Appendix 5: Item-and reliability analysis: FI

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.817	.818	5

Item Statistics

	Mean	Std. Deviation	N
Int Epstein6 I trust my initial feelings about people.	3.861	.8914	173
Int Epstein7 I believe in trusting my hunches.	4.040	.7877	173
Int Epstein8 My initial impressions of people are almost always right.	3.699	.8083	173
Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	3.642	.9269	173
Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.	3.699	.8904	173

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Int Epstein6 I trust my initial feelings about people.	15.081	6.947	.638	.433	.772
Int Epstein7 I believe in trusting my hunches.	14.902	7.554	.593	.372	.786
Int Epstein8 My initial impressions of people are almost always right.	15.243	7.313	.635	.406	.774
Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	15.301	6.700	.663	.443	.764
Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.	15.243	7.429	.519	.294	.808

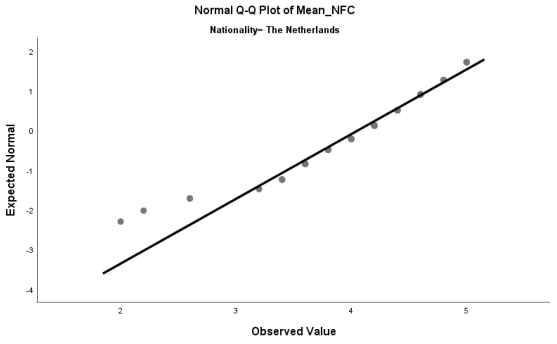
Appendix 6: Normality tests

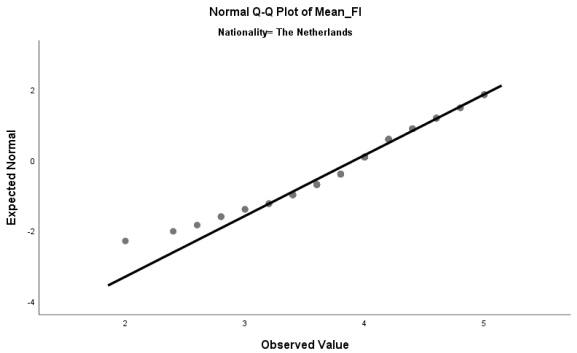
Tests of Normality

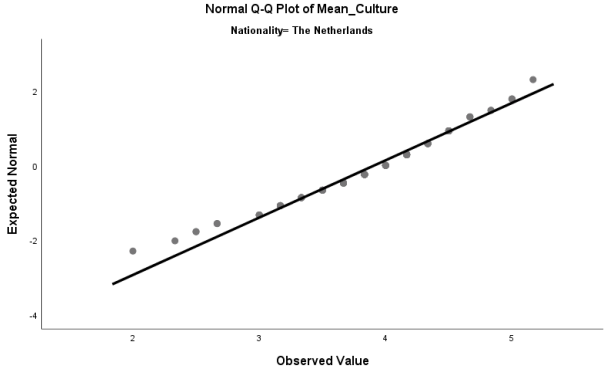
Nationality		Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
The Netherlands	Mean_NFC	.124	92	.001	.935	92	.000
	Mean_FI	.151	92	.000	.955	92	.003
	Mean_Culture	.109	92	.009	.970	92	.031
Malaysia	Mean_NFC	.134	80	.001	.970	80	.055
	Mean_FI	.077	80	.200*	.980	80	.248
	Mean_Culture	.119	80	.007	.976	80	.138

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction







Appendix 7: Regression Analysis

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.178[a]	.032	.026	.64257	.032	5.532	1	170
2	.313[b]	.098	.087	.62207	.066	12.390	1	169
3	.319[c]	.102	.086	.62248	.004	.775	1	168

a. Predictors: (Constant), Mean_Culture

b. Predictors: (Constant), Mean_Culture, Did you follow entrepreneurship courses?

c. Predictors: (Constant), Mean_Culture, Did you follow entrepreneurship courses?, Mod_Culture_Ent

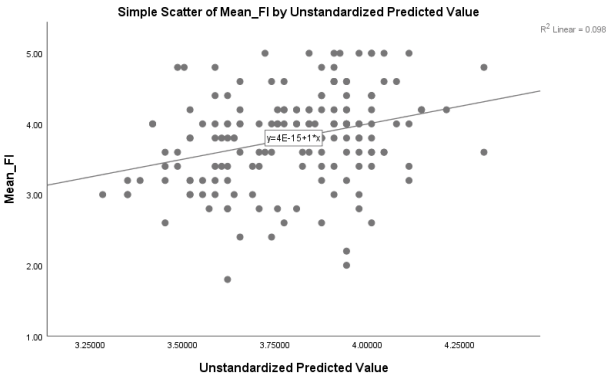
d. Dependent Variable: Mean_FI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.120	.291		10.713	.000		
	Mean_Culture	.167	.071	.178	2.352	.020	1.000	1.000
2	(Constant)	3.454	.297		11.611	.000		
	Mean_Culture	.203	.070	.215	2.914	.004	.979	1.021
	Did you follow entrepreneurship courses?	-.355	.101	-.260	-3.520	.001	.979	1.021
3	(Constant)	3.443	.298		11.557	.000		
	Mean_Culture	.207	.070	.220	2.966	.003	.974	1.026
	Did you follow entrepreneurship courses?	-.365	.102	-.267	-3.591	.000	.968	1.033
	Mod_Culture_Ent	.044	.049	.065	.880	.380	.986	1.014

a. Dependent Variable: Mean_FI

7.2: Multiple regression scatterplot



Appendix 8: Descriptive statistics

Descriptives

Nationality				Statistic	Std. Error
The Netherlands	Mean_NFC	Mean		4.0587	.06392
		95% Confidence Interval for Mean	Lower Bound	3.9317	
			Upper Bound	4.1857	
		5% Trimmed Mean		4.0995	
		Median		4.2000	
		Variance		.376	
		Std. Deviation		.61307	
		Minimum		2.00	
		Maximum		5.00	
		Range		3.00	
		Interquartile Range		.80	
		Skewness		-.913	.251
		Kurtosis		1.377	.498
	Mean_FI	Mean		3.9217	.06049
		95% Confidence Interval for Mean	Lower Bound	3.8016	
			Upper Bound	4.0419	
		5% Trimmed Mean		3.9411	
		Median		4.0000	
		Variance		.337	
		Std. Deviation		.58023	
		Minimum		2.00	
		Maximum		5.00	
		Range		3.00	
		Interquartile Range		.60	
		Skewness		-.600	.251
		Kurtosis		.987	.498
	Mean_Culture	Mean		3.9112	.06779
		95% Confidence Interval for Mean	Lower Bound	3.7766	
			Upper Bound	4.0459	
		5% Trimmed Mean		3.9340	
		Median		4.0000	
		Variance		.423	
		Std. Deviation		.65019	
		Minimum		2.00	
		Maximum		5.17	
		Range		3.17	
		Interquartile Range		.83	
		Skewness		-.562	.251
		Kurtosis		.154	.498
Malaysia	Mean_NFC	Mean		3.5875	.05806
		95% Confidence Interval for Mean	Lower Bound	3.4719	
			Upper Bound	3.7031	
		5% Trimmed Mean		3.5944	
		Median		3.6000	
		Variance		.270	
		Std. Deviation		.51934	
		Minimum		2.20	
		Maximum		5.00	
		Range		2.80	
		Interquartile Range		.40	
		Skewness		-.161	.269
		Kurtosis		.923	.532
	Mean_FI	Mean		3.6500	.07823
		95% Confidence Interval for Mean	Lower Bound	3.4943	
			Upper Bound	3.8057	
		5% Trimmed Mean		3.6528	
		Median		3.6000	
		Variance		.490	
		Std. Deviation		.69973	
		Minimum		1.80	
		Maximum		5.00	
		Range		3.20	
		Interquartile Range		.80	
		Skewness		.008	.269
		Kurtosis		-.251	.532
	Mean_Culture	Mean		4.1875	.07958
		95% Confidence Interval for Mean	Lower Bound	4.0291	
			Upper Bound	4.3459	
		5% Trimmed Mean		4.1713	
		Median		4.1667	
		Variance		.507	
		Std. Deviation		.71175	
		Minimum		2.67	
		Maximum		6.00	
		Range		3.33	
		Interquartile Range		.67	
		Skewness		.348	.269
		Kurtosis		.308	.532

Appendix 9: Correlations

9.1 Correlation: NFC and FI scale

Correlations

		Mean_NFC	Mean_FI
Mean_NFC	Pearson Correlation	1	-.044
	Sig. (1-tailed)		.283
	N	173	173
Mean_FI	Pearson Correlation	-.044	1
	Sig. (1-tailed)	.283	
	N	173	173

9.2 Correlations: Control, dependent and independent variable

Correlations

		Gender	Age	Did you follow entrepreneurship courses?	Years_Ent	Mean_NFC	Mean_FI
Gender	Pearson Correlation	1	-.013	.243**	-.158*	-.191**	.086
	Sig. (1-tailed)		.433	.001	.019	.006	.131
	N	173	171	173	173	173	173
Age	Pearson Correlation	-.013	1	-.196**	.369**	.200**	.026
	Sig. (1-tailed)	.433		.005	.000	.004	.370
	N	171	171	171	171	171	171
Did you follow entrepreneurship courses?	Pearson Correlation	.243**	-.196**	1	-.369**	-.273**	-.240**
	Sig. (1-tailed)	.001	.005		.000	.000	.001
	N	173	171	173	173	173	173
Years_Ent	Pearson Correlation	-.158*	.369**	-.369**	1	.150*	.092
	Sig. (1-tailed)	.019	.000	.000		.024	.113
	N	173	171	173	173	173	173
Mean_NFC	Pearson Correlation	-.191**	.200**	-.273**	.150*	1	-.044
	Sig. (1-tailed)	.006	.004	.000	.024		.283
	N	173	171	173	173	173	173
Mean_FI	Pearson Correlation	.086	.026	-.240**	.092	-.044	1
	Sig. (1-tailed)	.131	.370	.001	.113	.283	
	N	173	171	173	173	173	173
Mean_Culture	Pearson Correlation	.025	-.160*	.145*	-.093	-.110	.178**
	Sig. (1-tailed)	.372	.018	.029	.114	.075	.010
	N	172	171	172	172	172	172

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

9.3 Correlation: Partial correlation control variables

Correlations

Control Variables			Mean_NFC	Mean_FI	Mean_Culture
Gender & Age & Years_Ent	Mean_NFC	Correlation	1.000	-.050	-.089
		Significance (1-tailed)	.	.260	.127
		df	0	166	166
	Mean_FI	Correlation	-.050	1.000	.185
		Significance (1-tailed)	.260	.	.008
		df	166	0	166
	Mean_Culture	Correlation	-.089	.185	1.000
		Significance (1-tailed)	.127	.008	.
		df	166	166	0

Appendix 10: Exploratory Factor Analysis

Correlation Matrix[a]

		Epstein 1 REV	Cog Epstein 2 REV	Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.	Cog Epstein4 I prefer complex to simple problems.	Cog Epstein 5 REV	Int Epstein6 I trust my initial feelings about people.	Int Epstein7 I believe in trusting my hunches.	Int Epstein8 My initial impressions of people are almost always right.	Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.
Correlation	Epstein 1 REV	1.000	.534	.199	.266	.325	-.012	-.085	-.061	-.124	-.111
	Cog Epstein 2 REV	.534	1.000	.176	.189	.380	-.194	-.133	-.132	-.163	-.072
	Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.	.199	.176	1.000	.400	.087	.056	.118	.079	.074	.130
	Cog Epstein4 I prefer complex to simple problems.	.266	.189	.400	1.000	.082	.000	.026	.052	.078	.200
	Cog Epstein 5 REV	.325	.380	.087	.082	1.000	-.105	-.063	.003	-.054	-.084
	Int Epstein6 I trust my initial feelings about people.	-.012	-.194	.056	.000	-.105	1.000	.530	.531	.545	.372
	Int Epstein7 I believe in trusting my hunches.	-.085	-.133	.118	.026	-.063	.530	1.000	.494	.482	.349
	Int Epstein8 My initial impressions of people are almost always right.	-.061	-.132	.079	.052	.003	.531	.494	1.000	.507	.431
	Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	-.124	-.163	.074	.078	-.054	.545	.482	.507	1.000	.496
	Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.	-.111	-.072	.130	.200	-.084	.372	.349	.431	.496	1.000
Sig. (1-tailed)	Epstein 1 REV		.000	.004	.000	.000	.435	.132	.211	.052	.073
	Cog Epstein 2 REV	.000		.010	.006	.000	.005	.041	.042	.016	.172
	Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.	.004	.010		.000	.128	.231	.060	.151	.166	.045
	Cog Epstein4 I prefer complex to simple problems.	.000	.006	.000		.142	.498	.366	.248	.153	.004
	Cog Epstein 5 REV	.000	.000	.128	.142		.086	.204	.482	.239	.135
	Int Epstein6 I trust my initial feelings about people.	.435	.005	.231	.498	.086		.000	.000	.000	.000
	Int Epstein7 I believe in trusting my hunches.	.132	.041	.060	.366	.204	.000		.000	.000	.000
	Int Epstein8 My initial impressions of people are almost always right.	.211	.042	.151	.248	.482	.000	.000		.000	.000
	Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	.052	.016	.166	.153	.239	.000	.000	.000		.000
	Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.	.073	.172	.045	.004	.135	.000	.000	.000	.000	

a. Determinant = .077

10.2 KMO & Barlett's test

KMO and Bartlett's Test

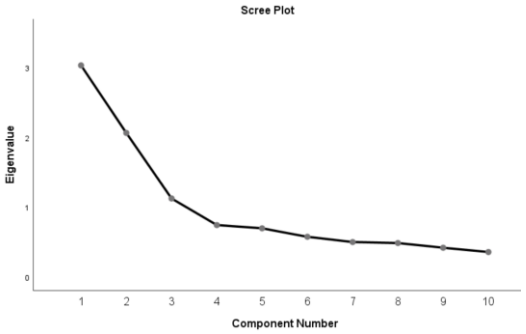
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	430.861
	df	45
	Sig.	.000

10.3 Total Variances explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.031	30.306	30.306	3.031	30.306	30.306
2	2.063	20.634	50.940	2.063	20.634	50.940
3	1.125	11.246	62.186	1.125	11.246	62.186
4	.744	7.441	69.627			
5	.698	6.975	76.602			
6	.576	5.759	82.361			
7	.501	5.007	87.369			
8	.486	4.862	92.230			
9	.419	4.192	96.423			
10	.358	3.577	100.000			

Extraction Method: Principal Component Analysis.



Rotated Component Matrix[a]

	Component		
	1	2	3
Epstein 1 REV		.763	
Cog Epstein 2 REV		.779	
Cog Epstein3 I prefer to do something that challenges my thinking abilities rather than something that requires little thought.			.776
Cog Epstein4 I prefer complex to simple problems.			.831
Cog Epstein 5 REV		.759	
Int Epstein6 I trust my initial feelings about people.	.799		
Int Epstein7 I believe in trusting my hunches.	.755		
Int Epstein8 My initial impressions of people are almost always right.	.795		
Int Epstein9 When it comes to trusting people, I can usually rely on my "gut feelings."	.791		
Int Epstein10 I can usually feel when a person is right or wrong even if I can't explain how I know.	.631		.301

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Appendix 11: Independent t-test results hypothesis 1 & 2

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Mean_Culture	The Netherlands	92	3.9112	.65019	.06779
	Malaysia	80	4.1875	.71175	.07958

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Mean_Culture	Equal variances assumed	.086	.769	-2.660	170	.009	-.27627	.10387	-.48132	-.07122
	Equal variances not assumed			-2.643	161.448	.009	-.27627	.10453	-.48270	-.06984

Appendix 12: Results Hypothesis 3

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Mean_NFC	The Netherlands	92	4.0587	.61307	.06392
	Malaysia	81	3.5852	.51651	.05739

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Mean_NFC	Equal variances assumed	2.788	.097	5.453	171	.000	.47351	.08684	.30210	.64492
	Equal variances not assumed			5.512	170.683	.000	.47351	.08590	.30395	.64308

Appendix 13: Results Hypothesis 4

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
Mean_FI	The Netherlands	92	3.9217	.58023	.06049
	Malaysia	81	3.6370	.70506	.07834

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Mean_FI	Equal variances assumed	5.134	.025	2.912	171	.004	.28470	.09777	.09172	.47769
	Equal variances not assumed			2.876	155.304	.005	.28470	.09898	.08919	.48022

Appendix 14: Results hypothesis 5

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Mean_NFC	Male	84	3.9619	.66331	.07237
	Female	87	3.7172	.55031	.05900
Mean_FI	Male	84	3.7333	.63042	.06878
	Female	87	3.8368	.68235	.07316

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Mean_NFC	Equal variances assumed	3.197	.076	2.629	169	.009	.24466	.09307	.06093	.42839
	Equal variances not assumed			2.620	161.246	.010	.24466	.09337	.06027	.42906
Mean_FI	Equal variances assumed	.971	.326	-1.029	169	.305	-.10345	.10055	-.30195	.09506
	Equal variances not assumed			-1.030	168.676	.304	-.10345	.10041	-.30168	.09478

Appendix 15: Scatterplot Cook's Distance