The Role of Education and Gender in Cultural Intelligence

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Prologue

This master thesis is written as our final thesis in the master study of Business Administration, specializing in International Management, at the University of Agder, spring 2017.
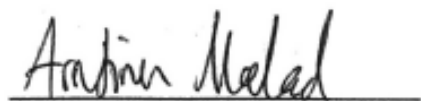
The topic was chosen on the basis of our great interest in culture, and how relevant this topic is for today's companies, thus also the University of Agder.

There are several people we want to thank for great assistance and motivation throughout the process of writing this thesis. First of all we want to thank our supervisor Ilan Alon for good assistance and constructive feedback. Next we want to thank our family and friends for their support and for proofreading.
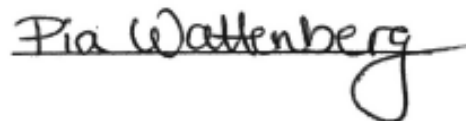
We also want to thank Ilan Alon again and Michele Boulanger for the loan of the scientifically approved test BCIQ-38.

At last we want to thank each other for an educational process and great teamwork.

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Abstract

The aim of this thesis is to identify how education and gender influences an individual's level of cultural intelligence. This is a relatively young field that is growing, as the world is getting smaller.

Initially, the theory on the subject is presented through different perspectives on cultural intelligence and previous studies connecting the relationship between cultural intelligence and both antecedents and outcomes.

By using analysis of variance, we have researched and analyzed the relationship between gender, education and other factors that might have an explanatory power on the level of cultural intelligence.
We have used the scientifically approved test BCIQ-38, developed by Ilan Alon, Michele Boulanger, Judith Meyers and Vasyl Taras, and questioned students at the University of Agder.

The results proved that there were differences between the genders and levels of education when it comes to cultural intelligence. Education had a significant impact on the global knowledge dimension, and females turned out to have higher motivational cultural intelligence. Number of countries lived in was the only variable which resulted in having significant effect on the total cultural intelligence score.
These findings emphasize the importance of taking a higher education, and to grasp the opportunity of studying abroad.

LIST OF ABBREVIATIONS

CQ - Cultural Intelligence

BCIQ - Business Cultural Intelligence Quotient

ANOVA - Analysis of Variance

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1 Introduction

Not long ago, there were only a few numbers of large multinational companies, but today even small companies have to face the global world on a regular basis. The rapid globalization has led to a more complex, dynamic and uncertain business environment than ever before (Thomas & Inkson, 2010). Firms worldwide are put in more intercultural settings than ever due to the rapid development in transportation and information technologies. The firms that are more equipped to handle cross-cultural settings will outrun the ones that are not (Ang & Inkpen, 2008).

It is not only the companies that are affected by the rapid globalization, but everyone in the general population as well. We do not only correspond with people from other cultures over the phone or when we travel, but in everyday life - in the grocery store or just passing them on the street. This creates a new challenge for everyone, particularly for the ones who work in business. We do not only have to learn about the barriers that are observable, such as legal, political and economic barriers, but we also need to learn how to cross the invisible and overlooked barrier - namely *culture* (Thomas & Inkson, 2010).

The World Trade Organization has predicted that by the year of 2029 80% of world output will be in global markets (Alon & Higgins, 2005). When interacting in the global workplace there are requirements that need to be fulfilled to engage appropriate behavior with people from other cultures. Individuals need to be sensitive to different cultures - have the ability to analyze as they are encountered and be able to identify what it is normal to require of people from other cultures (Earley, Ang & Tan, 2006). When experiencing a new culture our subconscious does not help us by automatically knowing and relating which cultural cues we need to follow, as it does when interacting in our own culture. In new cultures we need to concentrate and work with the information we get, to behave and cooperate as effectively and appropriately as possible. Having a high cultural intelligence will make adjusting appropriately to new cultural situations easier (Van Dyne, Ang & Livermore, 2010).

As the global market increases and goes through changes the need for leadership, experience and skills from global and international markets will get more and more important for a firm's international success (Alon & Higgins, 2005). One of the greatest challenges a manager faces in international settings is intercultural misunderstandings - not fully understanding the behavior and views of the other part. These types of misunderstandings are frequent and can often cause problems (Earley, 2002). The success of international companies is not fully dependent on cultural understanding, but it is necessary for their effectiveness (Earley, 2002). It can be difficult to work and cooperate with people from other cultures, because their cultural barriers can cause misunderstandings that can influence the efficiency and effectiveness of interactions in an organization (Ang, Van Dyne & Koh, 2006).

The research question of this thesis is as follows:
 "How will education and gender influence an individual's level of cultural intelligence?"

With this research question the thesis will research if education and gender will influence an individual's level of cultural intelligence - if individuals with an education has a higher CQ than the ones who do not, and if there is a difference in the CQ of men and women. We have used quantitative analysis with SPSS as analysis tool. We are testing the cultural intelligence of both first year and fifth year students at UiA, using a scientifically approved test, before analyzing the answers of the respondents using ANOVA. We will present relevant theory and previous research on the topic of this thesis that we will later use when discussing our findings before reaching a conclusion.

2 Theoretical Background

2.1 Culture

Culture has both objective and subjective components. Objective culture is what is visible and includes both what is human-made like the economic, political and legal systems, and social customs like language and art. A broader view of culture will include the subjective side such as values and beliefs (Ang & Inkpen, 2008).

2.2 Intelligence

Intelligence is about collecting the knowledge and information you have, and apply this to the situation in question and adapt effectively to the environment. The definition will change with the type of intelligence and environment the knowledge is being adapted to (Gelfand, Chiu & Hong. 2015). IQ is a known measurement for most people and measures the intellectual capabilities (Van Dyne et al., 2010). Schmidt and Hunter (2000) define IQ as "the ability to grasp and reason correctly with abstractions [concepts] and solve problems" (p.3). Other types of intelligence are social intelligence, emotional intelligence and practical intelligence (Ang, et al., 2007). Social intelligence is the capability to understand and manage other individuals and adapting to different social environments. Emotional intelligence measures the abilities to lead and interact with emotional sensibilities and refers to the capabilities to adapt to the emotions and feelings of one's own and those of others. Practical intelligence is to solve real-world problems that are outside of the school environment, meaning putting theory to practice (Gelfand et al. 2015). The concept intelligence used to be seen as the ability to solve problems in academic settings, but there is now an increasing agreement that intelligence shows in other places than the classroom (Ang et al., 2007).

2.3 Cultural Intelligence

There are several definitions of cultural intelligence (CQ). Earley and Ang (2003) define it as "a person's capabilities to function effectively in intercultural environments" (p. 12), whilst Ang et al. (2007) defines cultural intelligence as "an individual's capacity to function and manage effectively in culturally diverse settings" (p. 3). CQ focuses on how to facilitate effectiveness in intercultural encounters and environments by measuring a general set of capabilities and not for one specific culture. This means that for a person who is not very culturally intelligent it is possible to be effective in one culture and not in another, but for a cultural intelligent person he or she would have been effective in both. For example if a Norwegian manager is effective as an expatriate in Brazil, he can struggle in a different culture such as Nigeria. This would mean that the Norwegian manager does not necessarily have a high CQ, but that he or she has knowledge of the Brazilian culture (Gelfand et al., 2015).

Many approaches in cross-cultural settings may seem either too simple, such as smiling and avoiding the most serious taboos, or too extreme such as having to be a cross-cultural guru to go anywhere. This is where CQ comes in and offers a better way. It offers an overall repertoire that can be used in cross-cultural situations (Livermore, 2009). A fundamental difference between CQ and other types of intelligence is the domain of interaction. CQ is a social adaptation in intercultural interaction - the ability to adapt when interacting with people from other cultures (Earley, 2002).

Some of the main reasons for the high interest in CQ among companies today are the competitive advantage, increased profits and global expansion, but many are also interested in behaving properly and meeting people with respect when carrying out a work related setting. Meeting people with dignity and respect does not come automatically from just wanting it, and this is where CQ will offer us a way through the maze of different customs and values. CQ helps us to adapt appropriately in different cultural settings, and becoming more open-minded on how we see those who are different from us (Livermore, 2009).

2.3.1 Constituent Elements of Cultural Intelligence

Cultural Intelligence – Four Dimensions

Ang et al. (2007) states that CQ consists of four dimensions, and that there are different types of facets that constitutes the four dimensions of CQ: metacognition, cognition and motivation which are mental capabilities, and behavioral capabilities that are overt actions. Metacognitions is the process used to understand knowledge, while cognitive intelligence is the knowledge structures (Ng, Van Dyne, Ang, & Ryan, 2012). Motivational intelligence is directing and sustaining energy on a certain task or situation, and behavioral intelligence refers to actions - what people do instead of what they think (Ang et al., 2007).

Earley and Ang (2003) applied this intelligence framework and conceptualized CQ as comprising metacognitive, cognitive, motivational and behavioral dimensions with relevance to functioning in culturally diverse settings (Ng et al., 2012).

Figure 1: Four Dimensions of CQ
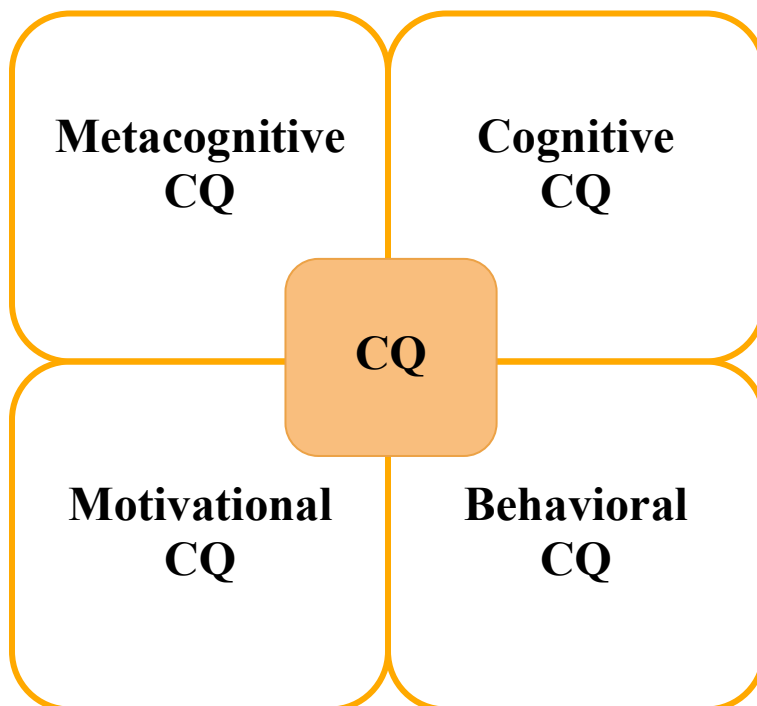
Metacognitive CQ refers to the mental process used to understand cultural knowledge, including planning, monitoring and revising the cultural norms for countries or groups of people (Ang et al., 2007). It is a person's ability to make a strategy when crossing cultures, in the sense of slowing down and observe, and thinking through what differences that are arising. Figuring out our own thoughts and processing the knowledge to help understand the cultural context and adjust to situations, is an important part of metacognitive CQ. Our thoughts and previous knowledge about a culture should be questioned when entering a new culture to check if what we thought is actually correct. If what we assumed turned out to be wrong we need to revise our thoughts (Van Dyne et al., 2010).

The rules when interacting in a meeting in our home culture may be significantly different from the rules in another culture. In our home culture there are less requirements for planning because it is easier to read the cues and respond to these automatically. When a meeting is set in a new culture, or people from other cultures are involved, the need for high metacognitive CQ is essential. It improves the awareness, planning and checking, which means being in tune for one's self and others, prepare the encounter with other cultures, and monitoring our plans and thoughts. Individuals who hold high metacognitive CQ are deliberately aware of the cultural preference of another individual, and are adjusting their mind both during and after interactions (Van Dyne et al., 2010).

Cognitive CQ refers to the knowledge about different cultures - norms, practices and agreements - acquired from education and personal experiences, but also knowledge about the economic, legal and social systems as well as cultural values. High cognitive CQ relates to understanding the similarities and differences across cultures (Ang et al., 2007). It also refers to a leader's capabilities to understand how culture affects the way of doing business, and what role culture plays when interacting with others. Having knowledge about culture will help shape the way of thinking and behaving (Van Dyne et al., 2010).
One of the most important parts of this CQ factor is the understanding of cultural systems. Every country has its own cultural system that contains economic, educational, social/family,

political/legal, language and religious beliefs. Values and norms will always be a part of a culture, and knowing about these will help avoiding misunderstandings.

Motivational CQ is the drive for learning about new cultures and how much energy a person wants to put into the process of learning (Van Dyne et al., 2010). It also refers to the capability to direct attention to cross-cultural situations based on interest, and the ability to learn about and function in situations with cultural differences (Ang et al., 2007). The need for being personally engaged in cross-cultural challenges is a very important aspect of CQ. When companies use money on training and wants to develop the cultural intelligence of their employees, there is no point of doing so if the employees have no motivation to learn and expand their cultural horizon. When leaders approach a new cultural challenge, there are especially three dynamics that plays a part in how well and effective the cross-cultural encounter will be:

- Intrinsic motivation - how much the leader is in fact enjoying the diverse situation
- Extrinsic motivation - the more tangible benefits one gets from the encounter
- Self-efficacy - a leader's confidence that the cross cultural encounter will be effective

(Van Dyne et al., 2010).

When exploring the motivational factor of cultural intelligence, Earley (2002) focuses on a person's self-efficacy and personal motives. The success of intercultural interaction is reliant on a person's efficacy in these situations, thus self-efficacy plays an important role in CQ. If a person does not believe in his/her capability to understand people from other cultures it is likely that this person will disengage if he/she experiences early failures in a cultural situation.

The norms and values that a person holds are an important side of the self, and therefore related to CQ. This guides what aspects of the social environment a person attends to and values. From a motivational perspective the values and norms guide our choices and helps us evaluate them (Earley, 2002).

Behavioral CQ is knowing the appropriate way to act when interacting with people from different cultures - both verbal and nonverbal. High behavioral CQ indicates a broad range of

verbal and nonverbal capabilities, such as words, tones, gestures etc., used appropriate in cultural diverse settings (Ang et al., 2007). The flexibility in speech must also be appropriate to the type of messages that are communicated. One important part of this factor is for a leader to know when to adapt and when to not adapt. By knowing this, he or she will also know what adaptation will enhance effectiveness. The demand for knowing how to act in the global market is increasing, but it is difficult to know all the cultural differences when there are so many different cultures that are part of today's global market. Although there are many things that we are not expected to know, there are still some norms that should be basic behavior. For example when western people are receiving a business card from an Asian businessman, the card has to be studied in respect of the card-giver (Earley, 2002).

The behavioral aspect of CQ proposes that adaptation also includes having a behavioral repertoire that benefits in different cultural situations, and not only using effort (motivational) or knowing what and how to do things (cognitive). If a person is lacking these behaviors, it is essential to be capable of gaining such behaviors (Earley, 2002). To behave properly in cultural settings and acquiring new skills requires willingness to be persistent over time. Regardless of this it is not enough just to be willing to try and learn new behaviors. It is also crucial to be able to know how to use them effectively and see where they are needed. A person with high CQ will be able to appropriately adapt his behavior to any cultural situation (Earley, 2002).

Together these four different dimensions of CQ form the overall CQ, according to Ang et al., (2007), and makes the capability to function and act effectively in culturally diverse settings.

Cultural Intelligence – Three Components

Thomas (2006) conceives of CQ consisting of three components - knowledge, mindfulness and behavioral ability, and these three put together gives the ability to interact effectively across cultures.

Figure 2: Three Components of CQ
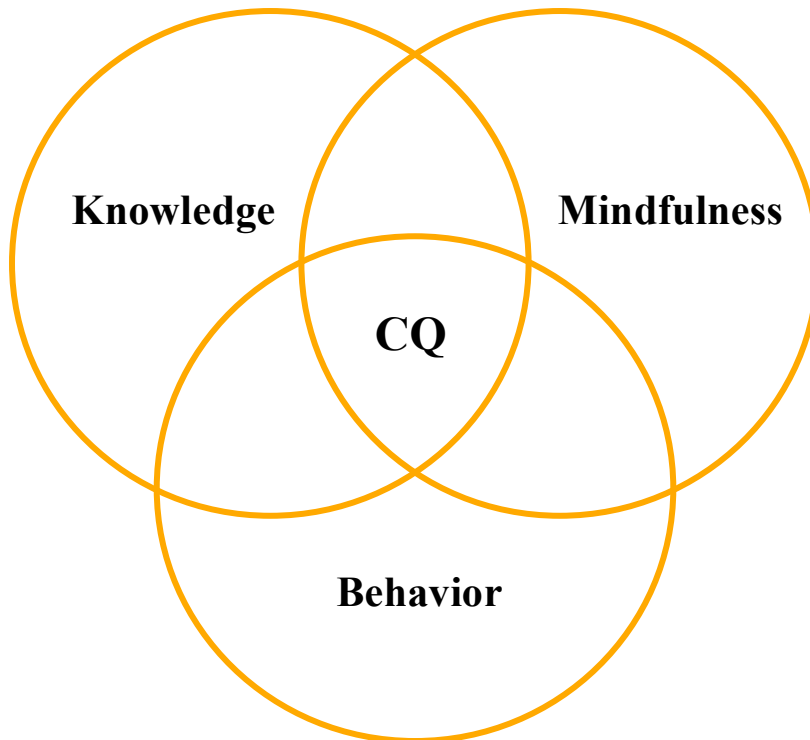
Knowledge of what culture is, how it varies and affects behavior is fundamental for achieving high CQ. We distinguish between two types of knowledge - content knowledge and process knowledge. Content knowledge forms the basis of CQ because it is about understanding the behavior of both ourselves and others in cross-cultural encounters. Process knowledge is knowing the processes through which cultural variation affects behavior, and it can further be divided into two different components - cognitive influence and motivational influence. Cognitive influence refers to the use of information a person holds, when compensating for

lacking information in certain situations (Thomas, 2006), while motivational influence refers a person preferred outcomes and ways of behaving (Fiske & Taylor, 1984).

Mindfulness - the concept mindfulness originates from Buddhism (Hahn, 1999), and is fundamentally "a heightened awareness of and enhanced attention to current experience or present reality" (Brown & Ryan, 2003, p.822). Langer & Moldoveanu (2000) states that mindfulness also can be related to the adoption of an active approach to cognitive processing, involving development of new categories in one's memory and looking for diverse perspectives. Linking mindfulness to CQ can mean looking at a situation from different perspectives with an open mind, noticing how the other person behaves and adapt to that, or using empathy and understanding a situation from their perspective rather than our own (Thomas, 2006).

Behavior refers to the ability to behave appropriate in different cultural settings, and is an important factor that makes CQ different from other related ideas. Culturally intelligent people develop a way to behave when facing new cultures, based on their knowledge and mindfulness, that makes them more competent handling a wide range of cultural situations (Thomas, 2006). The ability to behave appropriately involves choosing from a wide repertoire the right kind of behavior in a new culture, and also finding ways to create new behavior. In some situations it may be best not to adapt at all, because it may be taken negatively. Adapting too much may be seen as trying to imitate the other part rather than the actual culture (also known as mimicry), and this may lead to negative results (Giles & Smith, 1979).

Business Cultural Intelligence Quotient - Four Facets

The CQ mentioned above is a general measure of cultural intelligence, but in this thesis an instrument and quotient made specifically for measuring the cultural intelligence in business contexts, will be used. Due to the wide range of impact the cultural intelligence has, the CQ has the potential to become as important for business/management as the EQ (emotional intelligence) is for human resources and psychology. One reason why the concept of CQ has not been very popular in management research is the fact that it is difficult to measure. In a review of 32 measures there was only one that actually directly measured the CQ - a tool developed by Van Dyne, et al. (2009). Research focusing on business has not had adequate instruments to measure CQ, as the earlier developed measurements were either too general or at times irrelevant for business contexts (Alon, Boulanger, Meyers & Taras, 2016).

Alon et al. (2016) wanted to fill this gap and developed a new quotient called Business Cultural Intelligence Quotient, BCIQ. As mentioned earlier the global market is in rapid growth, and the workplace is getting more global, leading to more cross-cultural encounters. The need for high cultural intelligence is getting increasingly important. The BCIQ puts this exact need in focus and offers a measurement that helps multinational companies to find and develop managers fit to work in a global environment. The reason why this measurement is a more suited instrument for business contexts is that it is capable of predicting long-term success in other cultures based on the level of CQ and other variables, such as the number of countries lived in and number of languages spoken (Alon et al. 2016).
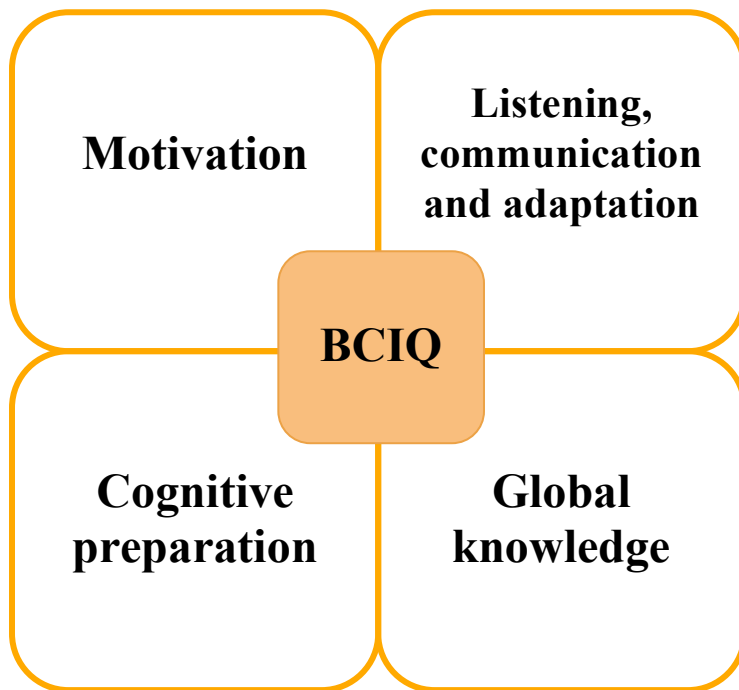
This construct consists of four facets being motivation, listening, communication and adaptation, cognitive preparation and learning behavior, and global knowledge.

Motivation is a person's openness to new ideas, interpersonal relationships, cultural identities and experiences.

Listening, communication and adaptation refers to verbal and nonverbal awareness regarding social practices and how information is exchanged.

Cognitive preparation is the self-study of appropriate cross-cultural behavior/business practices.

Knowledge is the level of general knowledge about other cultures in terms of facts, customs, practices, norms and values (Alon et al., 2016).

2.3.2 Development of Cultural Intelligence

Like other forms of intelligence, CQ develops over time - sometimes quite slow, even though a person may be living or working overseas (Govindarajan & Gupta, 2001).

Social interaction is an important factor in acquiring CQ, in the sense that people's experiences are converted into knowledge and skills (Bandura, 1977). CQ is thus learned over time through intercultural interactions, and a person goes through different stages when developing their CQ. Kohlberg, 1984 states that there are five possible stages of CQ development:

Stage 1: This stage is mainly where people with little experience and interest in other cultures are. People in this stage mostly care about their own cultural rules and norms, and may not even know that cultural differences exist.

Stage 2: People in this stage are more curious about other cultures, and experience and mindfulness build awareness of a multicultural world. They often use simple rules to guide their behavior in unfamiliar cultural settings.

Stage 3: On this level a deeper understanding of cultural variations develops. The norms and rules of other cultures are on one's mind, and individuals in this level start recognizing proper ways to behave in different cultural encounters. However, this behavior does not yet feel natural.

Stage 4: Adjusting to situations at this level does not require a lot of effort. Individuals can choose from a well developed repertoire of behaviors, depending on the exact cultural setting, and this requires almost no more effort than if they were in their home culture. An individual at this stage feels at home in almost any culture.

Stage 5: At this stage individuals can sense change in a cultural setting, also sometimes before members of the culture in question. They always know what behavior is expected and required and know how to use it effectively. Individuals with such high CQ are rare.

2.3.3 Different Approaches to New Cultures

An important step towards increased cultural intelligence is understanding some of the main differences between countries and cultures (Thomas & Inkson, 2010). A second approach to cross-cultural understanding is a "laundry list" for the country in question. This list provides an overview of the basic things you need to know about the country, such as regional or organizational variations, expected behavior, detailed customs, type of speech inflections, what might be considered offensive, and functional information like living costs, health services and education. Companies who are preparing employees for an assignment in another country, as well as tourists and travellers often use this approach. It may work well if you know exactly what culture you are going to meet, but it tend to be rather formal and dry, and may not work if you are going to interact with people from many different countries around the same time (Thomas & Inkson, 2010).

A third approach is to become more culturally intelligent - "being skilled and flexible about understanding a culture, learning more about it from your ongoing interactions with it, and gradually reshaping your thinking to be more sympathetic to the culture and developing your behavior to be more skilled and appropriate when interacting with others from the culture." (Thomas & Inkson, 2010)

There are many ways to fail when you first encounter a new cultural setting, and some common intercultural failures are the unawareness of the biases within our own culture, finding the differences threatening, not noticing when our cultural orientation is influencing our behavior and adjustment problems when it comes to living and working in a country with different culture (Thomas & Inkson, 2010).

2.3.4 Antecedents of Cultural Intelligence

There are several opinions and previous research on what determines cultural intelligence.

Figure 4: CQ Antecedents
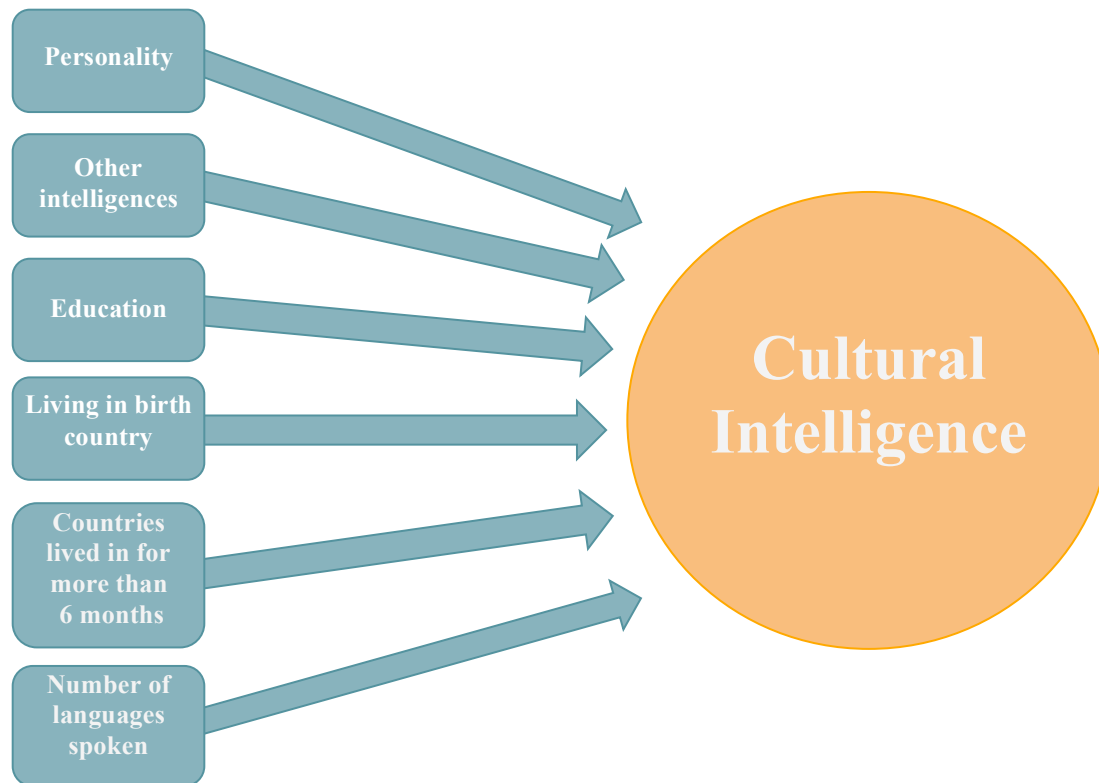
Since CQ shows what a person can do to be effective in cultural settings, it is crucial to look at what a person usually does in certain situations. Temperament influences the choice of behavior and thus some personality traits should relate to CQ, such as creativeness, being adventurous and being open to new experiences (Ang et al., 2007). Ang et al. (2006) found significant relations between the five personality traits, and the different dimensions of CQ. The results showed connections between *conscientiousness* and meta-cognitive CQ, *agreeableness and emotional stability* with behavioral CQ, *extraversion* with cognitive, motivational, and behavioral CQs, and *openness* to experience with all four factors of CQ. Their research states that openness is an extremely important feature a person should possess to reach a higher level of CQ in all aspects.

CQ can be quite similar to other types of intelligences, yet also distinct from them. There are several intelligences that poses the ground of CQ, therefore other intelligences might have an impact on a person's CQ. General mental ability and emotional intelligence are two types of intelligence that are often used in management research. The reason why CQ is a lot like these intelligences is because instead of being a chosen way of acting, they are a set of personal capabilities. General mental ability refers to cognitive abilities and is not specific to certain contexts and is not behavioral or motivational. Emotional intelligence goes beyond academic and mental intelligence, and refers to the capability of understanding and dealing with personal feelings (Ang et al., 2007). Research has found it to be differences between the two genders in emotional intelligence score where female managers ranked higher than male managers (Mandell & Pherwani, 2003). Emotional intelligence differs from CQ in the way that the managing of feelings is not linked to cultural settings. Although you might be emotional intelligent in your home country, this does not automatically transfer to other cultures, thus you might not be emotional intelligent in an unfamiliar culture. On the other side CQ is culture free, and is a general set of capabilities relating to cultural diversity (Ang et al., 2007).

Karri Anne Crowne's research about what leads to cultural intelligence found that those who had been abroad for education or work had a significantly higher CQ, than those who had not. Also the results showed that being on vacation in another culture did not affect the CQ, because a person will not get to know the culture on a sufficient level. Findings stated that being currently employed had an affect the total CQ score, and Crowne believes the reason is that employment can give individuals opportunities to be involved and interact with other cultures. The same study also found support for education creating higher behavioral CQ. An education may provide more opportunities to interact with people from different cultures, which is a factor for increasing the CQ. According to a study by Khodaday & Ghahari (2011) higher educational level leads to higher CQ in the two dimensions cognitive and behavioral CQ. The level of education also showed higher cultural intelligence in all four factors of BCIQ in the Five Country Study, by Alon et al. (2016). One finding in Crowne's (2008) study that influenced the CQ in a negative way was being a part-time student. These kinds of students are often older than the usual

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students, and this can have an impact on their CQ, as they might have had more experience interacting with other cultures outside of education.

Another way to increase the level of cultural intelligence is to be living in a foreign country for more than six months (Alon et al., 2016), which is supported by Crowne's (2008) findings. Alon et al.'s (2016) data showed that the cultural intelligence of a person who lived in the same country in which they were born differed significantly from a person who lived in a different country than their country of birth. Findings from Khodaday & Ghahari (2011) on the other hand, stated that people who had not been abroad had a significantly higher CQ score than the people who had. Already in 1985 Mendenhall and Oddou researched the effect of living in another country, living with the locals and learning about the behavioral norms and how to act in certain situations. Expatriate employees got a higher performance level the longer they interacted with the host locals. As a result of their interaction with local co-workers over time, uncertainty were reduced and the comfort level increased, which again made the performance level rise. However, Lee & Sukoco's (2010) findings suggest that an expatriate will not automatically have higher levels of cultural adjustment by having international experience. Only combined with higher CQ, international experience will have a significant impact on performance.

According to Alon et al. (2016) males rank higher than females in cognitive preparation and learning behavior, whilst Khodaday & Ghahari (2011) found females to have higher CQ in the meta-cognitive dimension. Alon et al.'s (2016) found the most important significant factors influencing level of cultural intelligence were shown to be number of countries lived in for more than six months, number of languages spoken and level of education (Alon et al., 2016).

2.3.5 Cultural Intelligence Outcomes

There are several research supporting the fact that high CQ has positive outcomes.

Figure 5: CQ Outcomes
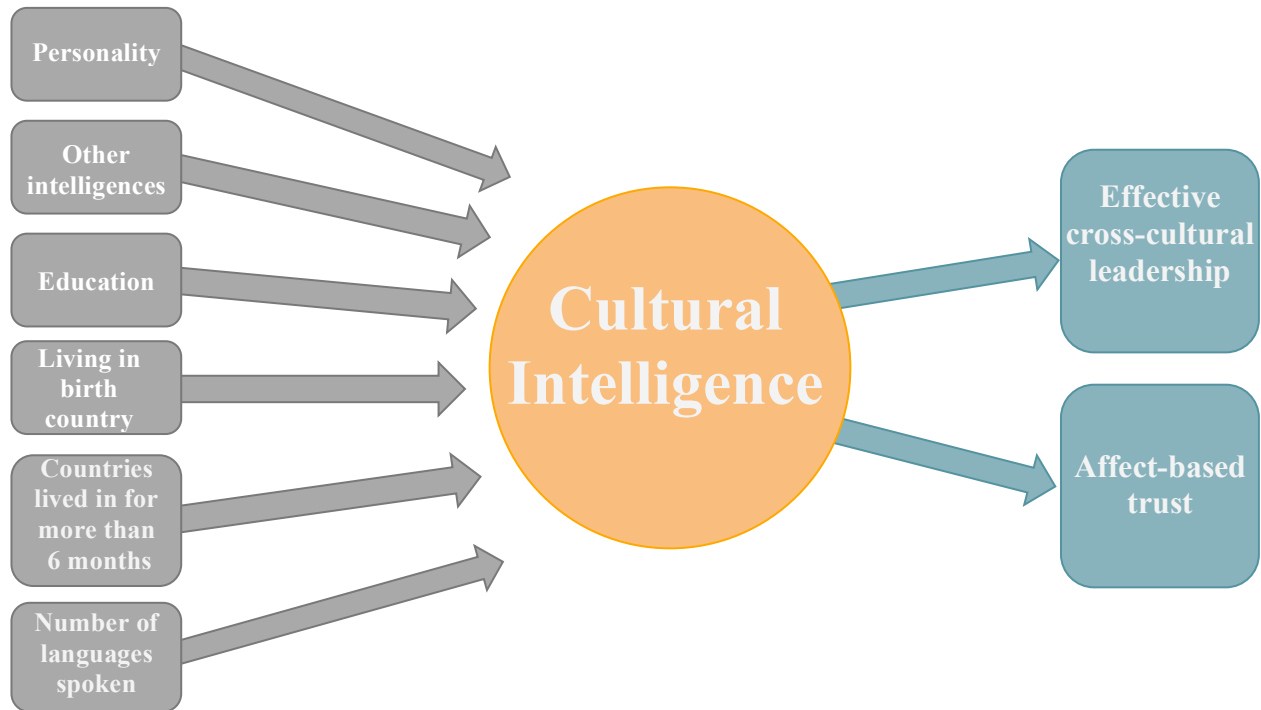
Effective Cross-Cultural Leadership

Today we are competing in a global market, and therefore leadership is a multicultural challenge (Livermore, 2009). Because of the rapid globalization, leaders must be able to function effectively in both cross-border settings and domestic settings. This is important when it comes to contrasting economic, political and cultural practices, and leaders are therefore carefully chosen by the organizations. It is crucial to be able to solve complex technical and social problems to be an effective leader, but being effective in a domestic setting does not automatically mean that you will be effective in a cross-border setting. Being able to work effectively in a cross-border setting depends on the ability to function in culturally diverse settings (Rockstuhl, Seiler, Ang, Van Dyne & Annen, 2011).

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Cross-cultural leadership is identified as the toughest challenge in top management by ninety per cent of leading executives. Leaders meet dozens of different cultures every day, either by travelling or as close as their own email inbox, and this requires adaptation. Most companies face circumstances where their customers' taste, behavior and assumptions are different, and they are often also in conflict with one another. Leading executives states that the most important reasons why cultural intelligence is so important today are diverse markets, multicultural workforces, profitability and cost savings, and attracting and retaining top talent. Leading without any cultural intelligence leads to higher travel time and travel cost, frustration and confusion, low job performance, increased time spent on getting the job done, and lost opportunities. In comparison, leading with CQ opens up a lot of opportunities. A culturally intelligent leader will carry out new assignments quicker, and this is more cost effective for the company when it comes to the very high costs of sending an employee abroad (Livermore, 2009).

Rockstuhl et al.'s (2011) findings support the fact that a cross-border leader who interacts with processes, people and systems from other cultures has a critical need for competency and high cultural intelligence. In their analysis CQ had a positive relationship with cross-border leadership effectiveness (Rockstuhl et al., 2011). According to Offermann and Phan (2002) there are three reasons why leaders with high CQ work more effectively in cross-cultural settings. First is their awareness of how their own culture and background affects the interaction, second is their ability to take a minute to see if what they assumed about the other culture is actually true, and third is their ability to combine their knowledge with motivation and behavioral flexibility, that further helps them to act appropriate in different cross-border contexts. Mannor (2008) states that leaders with advanced CQ are better equipped and have greater probability to cope with problems as miscommunication and misunderstandings among partners, suppliers and customers.

CQ is also essential for those who work in their home country, both in the sense of working with clients from different cultures, and the management of a diversified workforce. Two common challenges in leadership are building trust and good communication, but doing so in a culturally diverse group is an even harder task. Differences within the team may leave them in a gridlock,

but managed well with CQ, the team will offer the company many benefits. Diverse perspectives give some of the greatest potential for innovation. Studies have shown that in teams where the CQ was high the generation of innovative ideas increased. They developed a coherent strategy, minimized conflicts and maximized the diverse perspectives, and this resulted in good solutions. Leaders will not always be able to meet the wishes and demands of everyone in a culturally diverse team, but with cultural intelligence they will be better at exploiting the differences and accomplishing results (Livermore, 2009).

Groves and Feyerherm (2011) did research on leadership on 99 leaders from several organizations and examined their performance. They measured their CQ and emotional intelligence, and all the leaders were leaders of culturally diverse groups. The results of the study showed that CQ was highly related to the leader performance where the diversity of culture were high, and opposite in the homogeneous groups where the diversity were low. The study also showed that emotional intelligence had less or no relation to leadership performance, suggesting that the emotional intelligence is more a general interpersonal capability, not having any effect on settings where there are diverse cultures.

CQ is also important for leaders when it comes to recruiting, developing and retaining the best talent. Companies who use CQ in their daily practice will more expectedly employ and maintain the people who have high CQ. For employees who get assignments abroad, CQ is highly essential. As many as 16 to 40 per cent of them end the assignments early, and 99 per cent out of these are caused by cultural issues, and not lack of work skills. This has a costly outcome, thus very unfortunate for the companies (Livermore, 2009).

Earley, Ang and Tan (2006) gives an example of how cultural differences can appear and create misunderstandings. The example tells about anthropologist Edward Hall visiting Japan, where he stayed at a small family run hotel. After a week he discovered they have moved his belongings to another room, without his knowledge or consent. He thought the reason was that they only treated him as a foreigner and for this reason he did not make any fuss about it. Next week, the same thing happened again, and he did not ask them why, and after a while he went home to

USA. Next year he went back to Japan, and stayed in another family hotel, and here they did not just move him to another, room, but to another hotel. This time he asked a Japanese colleague why this happened. He told Hall that this was a actually a compliment, and only someone considered family would be treated this way (Earley, et al., 2006). This shows the cultural differences between an American manager and Japanese hotel owners and that Edward Hall thought he were mistreated and got offended, but in reality he was treated as family by the hotel owners.

Cultural intelligence is a source to competitive advantage and a strategic force for individuals and organizations. Leaders who understand, function and manage today's global markets are rare and very valuable, and maintaining this capability to effectively adjust to new cultures and new countries gives a strong competitive advantage. An increasing number of companies are therefore providing cross-cultural training programs for their employees. These types of courses aim to give knowledge, skills, abilities and greater awareness of cross-cultural differences - hence knowledge of what behavior is appropriate in different cultures (Ng, Van Dyne & Ang, 2009).

Affect- Based Trust

Rockstuhl and Ng (2008) conducted a test where they examined affect-based trust between teams of students at an interpersonal level. The test included groups of two people who either shared the same cultural/ethnic background or who had different backgrounds. This made it possible to test the effect of CQ in dyads that had the same background, and dyads where the culture was heterogeneous. The project lasted over a four month period were the teams had to work together to prepare a presentation on a topic in the field of international management. They had to test their CQ before they started the project. When the four months had past, they had to provide data on their affect-based trust in each other as team members. The results were that cognitive and metacognitive CQ had a positive influence on their trust in culturally diverse team members. The behavioral CQ also showed prediction in the trust of the team members from different cultures. The study showed no correlation between CQ and the homogeneous team members.

More research on this topic showed that CQ influenced the development of trust over time, between people who came from different cultures (Gelfand et al., 2015).

They conducted a similar test where the examiners showed lower affect-trust in culturally diverse others than in culturally similar settings, at the beginning of the project. The study monitored trust at the beginning of the project, cognitive ability, the big five personalities, international experience and demographic traits, and it showed at the end of the project that CQ had a positive influence to intercultural affect-based trust. Also in this study, the teams with similar cultural background did not positively correlate with CQ (Gelfand et al., 2015).

Chua, Morris and Mor extended the research on this topic in their study in 2012. They asked 60 managers in an executive MBA course, to list up to 24 business contacts. For each of the contacts they had to list their cultural background, level of affect-based trust in the contact, and the possibility for how likely they would share a new idea with this contact. Prior to taking the social network survey, the MBA course takers had to measure their metacognitive CQ. By copying and using the findings by Rockstuhl and NG (2008) the executive's metacognitive CQ related positively to affect-based trust in intercultural contacts, and was not related to the one's with the same cultural background as themselves. The idea of "sharing" was also predicted by metacognitive CQ to be more likely to people from other cultures rather than the same culture.

2.3.6 The BCIQ Instrument

Early research on the subject of CQ has naturally been in the human resources area, and more specifically in the area of cross-cultural management. The measurement of CQ is quite difficult since there are no right or wrong answers to the questions and surveys. Additionally, it is not possible to observe CQ directly as you can not observe motivation and metacognitive components. As for the behavioral part, it can in theory be observed, but to implement this to an experimental design would be very costly, thus impractical. Compared to IQ tests were the test taker has to answer what 1+1 is, the test taker will in a CQ test rather be asked how well they know the answer based on a Likert scale. In this approach the knowledge component is not directly tested, but rather the respondent's perception of their knowledge. The test taker assesses its own CQ, and is not tested with wrong or right questions or through observations (Alon et al., 2016).

In this area the BCIQ stands out from previous CQ - tests. A combination of quasi-direct observations and objective direct measurements are used in the BCIQ. The knowledge component is being directly measured through right or wrong answers, so the actual cultural knowledge is correct, and not the respondent's perception. It also stands out from the rest because of its focus on business CQ, making it suitable for international management and business research.

The structure of the BCIQ model relies on more sophisticated factors which will capture all the CQ aspects. The questionnaire does not ask the respondents how well they do things, but focuses instead on how often and in what way they do it. Doing it this way, combining direct measurement with the respondent's observations, the BCIQ will capture actual behavior and skills of the test taker (Alon et al., 2016).

3 Method

In this section we will give an explanation of the method we have chosen.

3.1 Quantitative Method

The purpose of quantitative method is to gather easily systematized information and type this into a computer program in a standardized form, so that many components can be analyzed at the same time. One method to gather this information is through secondary data in terms of available statistics or surveys based on questionnaires. Another method used to gather data is through primary data in terms of surveys with closed alternative answers, where the participants can only answer within the preselected framework. When the data is collected there are different types of methods to analyze it, some of which are regression analysis, ANOVA and student t-test (Jacobsen, 2015).

In this thesis we will perform an analysis of variance, and have chosen to do a three-way ANOVA. We originally did a multiple regression analysis, but found out the ANOVA is more suited for this research question and the data we are using. ANOVA is deemed as the best alternative because we have three independent variables and one continuous dependent variable. Also the dependent variables are continuous while the independent variables are categorical. We will perform five tests, and change the dependent variable for each time, because we want to test the total BCIQ and the related four dimensions against *gender* and *education*.
Since the *education* variable has three groups we can not do a t-test and have to do an ANOVA. We have two different independent variables making the two-way ANOVA best suited for our research.

3.1.1 Analysis of Variance

Analysis of Variance, ANOVA, is a statistical test that can be used to analyze data, and to see if there are any significant differences between groups. The purpose of this analysis is to see if the means from several populations are statistically significant or not. There are two different techniques to check for variance within and between the groups. When checking within groups it will be tested if there are significant differences for example within a group with same educational level. When testing between groups the variance between for example different level of education will be tested.

This is used in general to test if the null hypothesis can be rejected. If the variance estimated between the groups is significantly different, the hypothesis that states they are the same will be rejected (Gripsrud, Olsson & Silkoset, 2004).

H_0: $\mu_1 = \mu_2$

H_A: $\mu_1 \neq \mu_2$

For variance analysis the total variance is the variance within the groups, plus the variance between the groups. The mean of the variance within the groups can be found by dividing the variance within the group by number of observations and number of groups.

To calculate the variability between the groups we need to find the difference in each group - mean and the total mean.

Within groups sum of squares – SSW:

$$(1) \quad \sum\sum(x_{ij} - \overline{x}_j)$$

Mean SSW we find by
$$(2) \quad SSW / n - k$$

Between groups sum of squares – SSB:

$$(1) \quad \sum n_j (x_j - \overline{x})^2$$

Mean SSB e find by:
$$(2) \quad SSB / n - k$$

When the null hypothesis is correct, the groups we are studying should be very similar and a considerable difference should not exist (Gripsrud, et al., 2004).
When conducting the ANOVA we want to get the test statistic F to check if the groups are statistically significant from each other.

The test statistic can be found with:

F = MSSW / MSSB

If this equation is approximately equal to 1 (F = 1), the two variance estimates will be almost equal, and we can not reject the null hypothesis. When the equation increases the suspicion of the null hypothesis being rejected increases as well (Gripsrud, et al., 2004).

3.1.2 The Model's Explanatory Power

The evaluation of a model is not only about the coefficients individually, but the model as a whole. How powerful is the model's explanatory power? The most commonly used measure is the explained variance R^2 - pronounced R Square. Explained variance explains how much of the variation in the dependent variable that can be attributed to the explanatory variable. This is simply the Pearson R^2 value multiplied by itself, that is used in the correlation analysis. R^2 will have a score between 0 and 1 and the closer to 1 it is, the higher explanatory power the model will have. In models with several independent variables it is usually better to use the adjusted R^2. The problem with R^2 is that it will always increase or stay stable when a new variable is added to the model. The adjusted R^2 will always be lower than R^2, and how much lower depends on the sample size and number of explanatory variables added (Midtbø, 2007).

3.2 Correlation Analysis

The correlation analysis in table 1 shows the correlations between all variables included in the thesis. The correlation refers to the strength of the relation between two variables. From the table we can see that the correlation between the BCIQ dimensions is highly correlated. What stands out is the correlation between BCIQ knowledge and cognitive preparation and listening, communication and adaptation. We can see that it is close to R = 0 in both of these cases, compared to the correlation between total BCIQ and motivational BCIQ with R = .760.

From the table we can also see which of the correlations that are significant, meaning it is not likely to be random, and the probability for it to be statistically correct increases. We operate with a 95 % level, meaning the p-value needs to be lower than .05 to be significant. From the table the correlations marked with * are significant and the interesting part is to look at *education, gender,* and *countries lived in*, because these are the independent variables in our analysis later in the thesis. *Gender* is significantly correlated with the dimensions total BCIQ, motivation and listening, communication and adaptation, but strongest correlated with motivation were R = .238. *Education* is only significant correlated with global knowledge BCIQ and how many countries the respondent has lived in, meaning the higher level of *education*, the more likely it is that the test taker has lived in another country for over six months. *Countries lived in* are significant correlated with all BCIQ dimensions except global knowledge and listening, communication and adaptation.

Table 1: Correlation Analysis

	1	2	3	4	5	6	7	8
1. Total BCIQ	1.000 -							
2. Motivation	.760* (.000)	1.000 -						
3. List. Com. Adapt.	.740* (.000)	.459* (.000)	1.000 -					
4. Cogn. Prep	.541* (.000)	370* (.000)	.259* (.000)	1.000 -				
5. Knowledge	.338* (.000)	.136* (.041)	- .012 (.876)	.011 (.891)	1.000 -			
6. Education	.136 (.082)	.095 (.227)	- .062 (.426)	.128 (.102)	.321* (.000)	1.000 -		
7. Countries lived in more than six months	.261* (.000)	.287* (.000)	.093 (.233)	.172* (.027)	.088 (.261)	.239* (.002)	1.000 -	
8. Gender	.187* (.016)	.238* (.002)	.160* (.040)	- .125 (.108)	.067 (.391)	.097 (.217)	.097 (.214)	1.000 -

* Significant at < .05 level

4 Data

In this part of the thesis we will present the data used in the analysis.

4.1 Dataset

In this thesis we have chosen to use a scientifically approved test/survey, made by Ilan Alon, Michele Boulanger, Judith Meyers and Vasyl Taras, that measures the level of BCIQ in the test takers. This means that the design of the survey is preset, but we did the collection of data ourselves.

The dataset that were used in the development of BCIQ-38 consisted initially of 40 self-report questions, 20 knowledge questions and 18 demographics and business experiential questions. During the development, the 40 self-report items were reduced to 18. In addition there were 20 true/false questions assessing the respondents' global knowledge. The questions included four about the American culture, five about Asia, five about the Middle East and Africa, four about Europe, one about Oceania and one about the world in general (Alon et al., 2016).

When constructing this new measurement it was compared to Ang et al.'s (2007) existing instrument, which is the most used instrument to assess cultural intelligence. When comparing these two it was discovered that they shared a similar motivation construct. The other constructs did not appear to be related, which showed the difference between these two tools (Alon et al., 2016).

The connection between the external demographic variables and exposure to different cultures, as well as the dimensions of the revised instrument were examined to further validate the instrument. How well BCIQ predicts behavior and performance in cross cultural settings were also looked at, by using two measures of performance - overall performance measure and non-participation measure. The reason for going through this validation process was to confirm that the BCIQ-38 was the final model for assessing cross-cultural intelligence (Alon et al., 2016).

The respondents in this study were first year students and fifth year students from the Business Administration study at UiA. They were in the age group of 19 - 45, and mostly in the early twenties with a mean of 23 years. Out of the total (165) respondents, 27 (16,4 %) of them were currently not living in the same country as their birth country, and 145 out of the 165 test takers (87,9 %) were Norwegians. 100 of the total of 165 (60,6 %) were females, and the remaining 65 were men. 52 out of the total 165 (31,5 %) had a Master's degree as their highest level of education, 50 (30 %) had some post - high school, and 53 (32 %) had only completed high school.

4.2 Coding of Variables

In this thesis, the quantitative analysis was conducted using the statistical program SPSS. Variables can easily be decoded into for example dummy variables and be customized to the purpose of the analysis.

The variables describe what we are researching, and the units (N) represents who we are researching. The variables are given values that are quantitative testable and examples of variables are gender, religion, income or age. There are different kinds of variables, and the dependent variable is the one that is affected by other variables such as independent variables, dummy variables and control variables. The control variables are usually less interesting, because they are added to the analysis to support that the main variables are actually measuring the correct value. In our research we want to test if the BCIQ (dependent variable) is affected by the level of education (independent variable) and gender (independent variable). We also add the variable "countries lived in more than six months" to check how much this influences the dependent variables. When adding this variable the results will be more accurate and show if education and gender is affecting CQ or if it is the number of countries lived in that is the affecting variable (Midtbø, 2007).

The variables can have different values and level of information. How trustable and informative a variable is, increases with the level of the variable. Nominal variables are the least precise variables, and are used to separate groups - examples are nationality and gender. This type of variable will not say if one group is higher or better than another, it only states which group the participant belongs to. Ordinal level variables are possible to rank in order from low to high, for example education, since we can divide the education into different levels (Midtbø, 2007).

In this analysis we have six different levels of education that the test taker can choose from when taking the BCIQ survey. The level of education chosen by the respondent is their highest level of education, and does not take into account if the respondent has several degrees. It is not possible to use text in an ANOVA, thus we have to give the levels a value.

We have chosen to code the variables as followed:

0 = Primary School

1 = Some Secondary (High) School

2 = Secondary (High) School completed

3 = Some post-secondary (University/College/Polytechnic

4 = University or College degree

5 = Postgraduate Degree (e.g. Masters, Doctorate, LLD, MD)

When conducting the analysis we chose to group 1 and 2 together and 4 and 5 together. This was because we did not want few observations in cells, as the number of members of group 1 and 4 was very low. None of the respondents chose group 0 primary school, thus this was not included.

The test takers could choose from 4 different alternatives, when answering how many countries the test taker had lived in for more than six months.

We have chosen to code the variables as followed:

0 = none

1 = one to two countries

2 = three to five countries

3 = More than five countries

Even if it is possible to rank these variables it is difficult to know the distance between the values. It would be incorrect to say that some secondary high school represents twice as much education as primary school. All we know is that it is more education, but not how much better it is.

The highest level of variable measurement is metric variables, which are not codes, but numbers that have a meaning. We can rank them in order, and we also know how much higher one is than another, and the distance between them. The BCIQ scores are examples of metric variables - we know that a score of 110 is 20 points better than a score of 90.

We will also add dummy variables which are variables given two values, usually 0 and 1, so that we can easier measure the variable. We have done this with the gender variable, and given

female the value 1 and male 0. This will make it possible to measure the difference in gender together with BCIQ. The problem with this kind of variable is that is does not explain the reason of the differences, only if a difference exists (Midtbø, 2007).

Table 2: Coding of Variables

Dependent variables		Measure level
Total BCIQ score	Score from BCIQ test	Scale - mean is 100
Motivation	Score from BCIQ test	Scale - mean is 100
Listening, Communication and Adaptation	Score from BCIQ test	Scale - mean is 100
Cognitive Preparation	Score from BCIQ test	Scale - mean is 100
Global Knowledge	Score from BCIQ test	Scale - mean is 100
Independent variables		
Education**	Coded	Score from 0-5
Countries lived in for more than 6 months**	Coded	Score from 0-3
Gender*	Coded	Coded 0 or 1

*Dummy variables are coded 0 or 1

** Coded and explained in earlier paragraph

4.3 Omitted Variables

When choosing the variables to include in the ANOVA analysis there were several demographics that were omitted: parents from another country, living in birth country, number of languages spoken, how many countries visited for vacation and age. The reason why we chose to omit these variables was that the respondent's answer were almost equal and therefore it would not have had any effect on the analysis. The largest portion of the attendees are Norwegians who have Norwegian parents. A small share is from foreign countries, and the variable for living in another country than their birth country was omitted, but we included the variable for living in another country for more than six months. Number of languages spoken both fluently and intelligible was very similar for all the students that were tested. Age was omitted with the reason that it is their experiences that will influence their level of CQ, not how old they are. Yes, a person ten years older than another would probably have had more experience, thus higher CQ, but if we had put them both in a room from they were born, they would most likely have had the same CQ.

4.4 Descriptive Statistics

Descriptive statistics of variables are presented below in table 3. The table includes sample size (N) and information about average value and the corresponding standard deviation.

Table 3: Descriptive Statistics

Mean (standard deviation)	First year students	Fifth year students	Total sample group
Variables (Dependent variables*)			
*Total BCIQ	93.22 (5.25)	94.36 (6.45)	93.58 (5.66)
*Motivation	90.48 (8.53)	90.54 (9.72)	90.50 (8.89)
*Listening, Communication and Adaptation	90.29 (9.70)	89.14 (10.39)	89.93 (9.91)
*Cognitive Preparation	95.94 (6.93)	98.03 (7.97)	96.59 (7.32)
*Global Knowledge	93.90 (9.66)	100.44 (8.99)	95.96 (9.91)
Education	**2.80 (.80)**	**4.48 (.051)**	**3.43 (1.284)**
Countries lived in for more than 6 months	.35 (.60)	.64 (.60)	.44 (.608)
Age	22.04 (5.15)	24.81 (4.23)	23.05 (4.73)
Gender	.61 (.49)	.58 (.50)	.61 (.49)
N	113	52	165

Descriptive statistics from the ANOVA - first year students, fifth year students, and the total sample group.

4.5 Operationalization of the Research Question

"How will education and gender influence an individual's level of cultural intelligence? "

With our research question we want to find out if individuals with an education have a higher CQ than the ones who does not, and if there is a difference in the CQ of men and women. Cultural intelligence (CQ) is measured with the dependent variable called *Cultural Intelligence*. The independent variable named *Education* represents if the individual has a higher educational level or not, and the independent variable *Gender* refers to if the respondent is male or female.

Figure 6: Independent and Dependent Variable

Independent /explanatory variables ⟶ Dependent variable
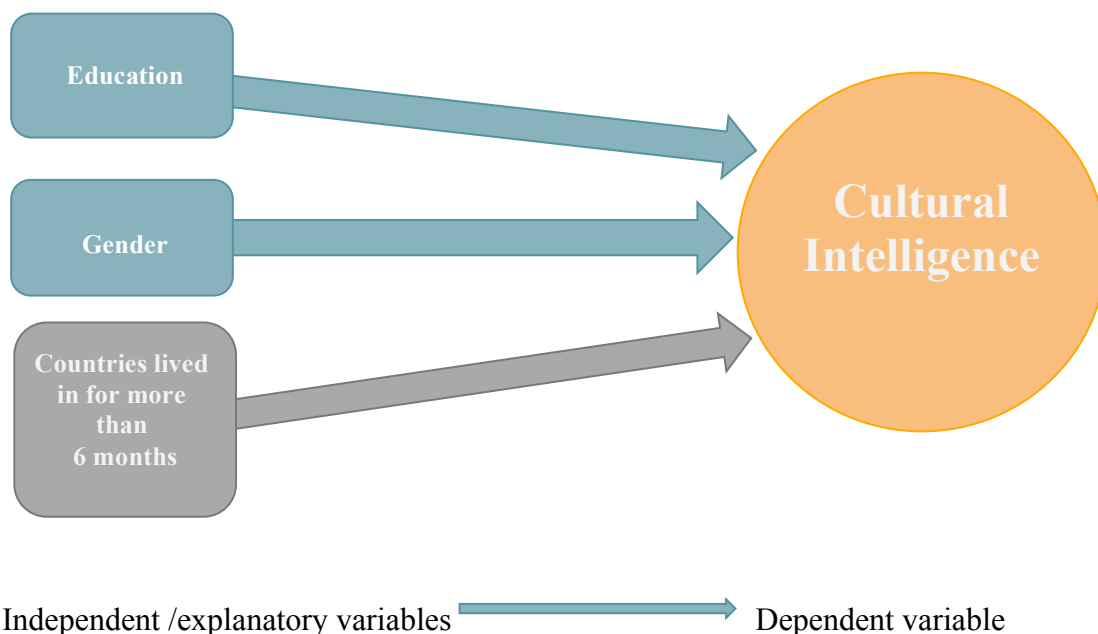
We want to find out if *education* leads to higher CQ, and if *gender* influences the level of CQ. At the same time we control for the other included variable *countries lived in for more than six months*.

5 Analysis

In this part of the assignment, we will look at our findings. We carry out a mean analysis and 5 different ANOVA tests that will represent our research questions.

Figure 7: Mean Differences in BCIQ
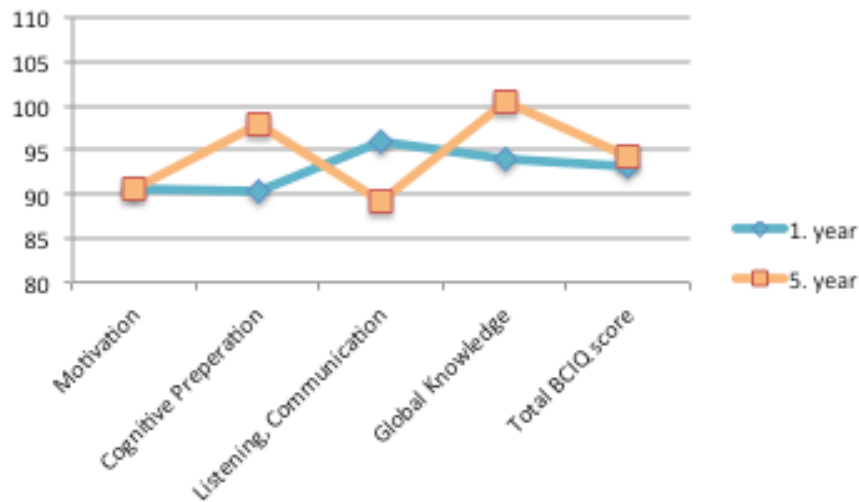
From figure 7 we can see the differences in means between the first year students and the fifth year students. The information we get from this figure is that fifth year students clearly has a higher BCIQ score in the two dimensions global knowledge and cognitive preparation, equal in motivation and some higher in the total BCIQ. First year students are surprisingly higher in the BCIQ dimension listening, adaptation and communication. The BCIQ instrument operates with a mean score of 100, and from the information from the figure the students tested are below this, with the exception of global knowledge.

Further on, it will be researched if the differences in means are statistically significant, and to do so ANOVA tests will be performed. When conducting the ANOVA tests the level of education are split into three groups. The reason for this is to give the respondents who have some education, but not a Master's degree, an option. By putting this group together with the group who has no higher education or the group who has a Master's degree the findings would have been affected in a wrong way.

5.1 ANOVA

In this part we will perform analysis of variance, ANOVA, to check if *education* and *gender* has an effect on the BCIQ scores. We will perform five three-way ANOVA tests, where the BCIQ score from each of the four different dimensions and the total score will be the dependent variable, and *education*, *gender* and *number of countries lived in* will be the independent variables. The purpose is to see if *gender* and *education* influence the BCIQ score. When performing the ANOVA test in SPSS we also add the variable *education*gender* to see if there is an interaction effect, meaning that the educational level is dependent on gender to have a statistically significant difference.

Hypotheses:

H_0: There are no differences in BCIQ between the levels of education.
H_A: There are differences in BCIQ between the levels of education

H_0: There are no differences in BCIQ between Gender.
H_A: There are differences in BCIQ between Gender.

Reject H_0 for $p < .05$

5.1.1 ANOVA Test 1 - Total BCIQ

Table 4: Descriptive Statistics Total BCIQ

			Descriptive Statistics		
Dependent Variable: Total BCIQ score					
Education	Countries lived	Gender	Mean	Std. Deviation	N
Secondary (High) School completed	None	Male	92.0139	4.9692026	21
		Female	91.9871	3.5078496	18
		Total	92.0015	4.3013204	39
	One to two	Male	92.2805	4.3920232	4
		Female	94.0318	4.6839926	7
		Total	93.3950	4.4420173	11
	Three to five	Male	82.2346	.	1
		Female	94.2294	.	1
		Total	88.2320	8.4816044	2
	Over five	Female	106.528	.	1
		Total	106.528	.	1
	Total	Male	91.6788	5.0783035	26
		Female	93.1388	4.6024297	27
		Total	92.4226	4.8510619	53
Some post-secondary (University/College/Polytechnic	None	Male	91.8222	5.3517357	10
		Female	93.8687	4.7050267	26
		Total	93.3002	4.9031988	36
	One to two	Male	91.8114	5.1703235	7
		Female	99.3756	6.5776436	6
		Total	95.3026	6.8408837	13
	Three to five	Female	92.0508	.	1
		Total	92.0508	.	1
	Total	Male	91.8178	5.1122624	17
		Female	94.8148	5.3778346	33
		Total	93.7958	5.4293621	50
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	None	Male	92.7297	6.2967151	12
		Female	90.8608	6.1686485	14
		Total	91.7234	6.1753784	26
	One to two	Male	93.2858	5.4737830	9
		Female	97.3743	5.7812551	23
		Total	96.2244	5.9109909	32
	Three to five	Male	100.7080	.	1
		Female	95.8424	7.2101920	3
		Total	97.0588	6.3699566	4
	Total	Male	93.3198	5.9144990	22
		Female	94.9797	6.6131007	40
		Total	94.3907	6.3752892	62

From the descriptive statistics figure, related to ANOVA test 1, we can identify that the mean of total BCIQ score increases for each level of education. We can see that the number belonging to each group (n) of education is evenly distributed. From the standard deviation we get information about the average amount of variation in the scores. These are also increasing by the level of education and are highest for females with a Master's degree, and lowest for males with secondary school completed. There are one score that separates from the others, and that is the one test taker who has lived in over five different countries for more than six months, with a total BCIQ mean of 106.5281. This information has to be treated with caution as this is only one person and is therefore not representing the larger group. From the descriptives we can see that the group of students who has a Master's degree has the highest number of *countries lived in*, with 32 out of 62 people saying they have lived in more than one country. This is probably because these students have had the chance to travel to other countries as exchange students.

What we focus on in the ANOVA test are the F-value and the significant value. As mentioned earlier we want to check if the level of education, number of countries lived in and gender are statistically significant different from each other.

Table 5: ANOVA Total BCIQ

	Type 3 SS	Df	F – Value	P – value (sig.)
Education	145.866	2	2.621	.076
Countries Lived in	336.655	3	4.033	.009*
Gender	90.636	1	3.257	.073
Education*Gender	163.782	2	2.943	.056

R Squared = .223 (adjusted R Squared = .133)

* Significant < .05

From table 5 we can observe the F-value and the sig to see if it is statistically significant. The first thing we notice is that the F-value belonging to *education* is 2.621 with a belonging sig. of .076. This is telling us that the level of education does not have a big enough difference to be statistically significant. Looking at the next independent variable, *gender*, we can see that this is not statistically significant with a p-value .05 < .073 and F-value 3.257 > 3.00. The last independent variable, *number of countries lived in*, is statistically significant with F-value 4.033 and p-value .009 < .05. We can, with a security of 99.9 % safety state that the *number of countries lived* in has an effect on the total BCIQ.

When adding the variables into SPSS we wanted to check a new variable, by multiplying the two independent variables with each other, to see if there is an interaction effect. *Education*gender* did not come out as significant, but was very close to the significant level with a p-value of .056. Given this information we can speculate that if we had had a larger test group it could have gotten below .05, thus be significant.
R square gives this model an explanatory power of 22.3 % of the variance change in the mean.

Figure 8: Estimated Marginal Means of Total BCIQ Score
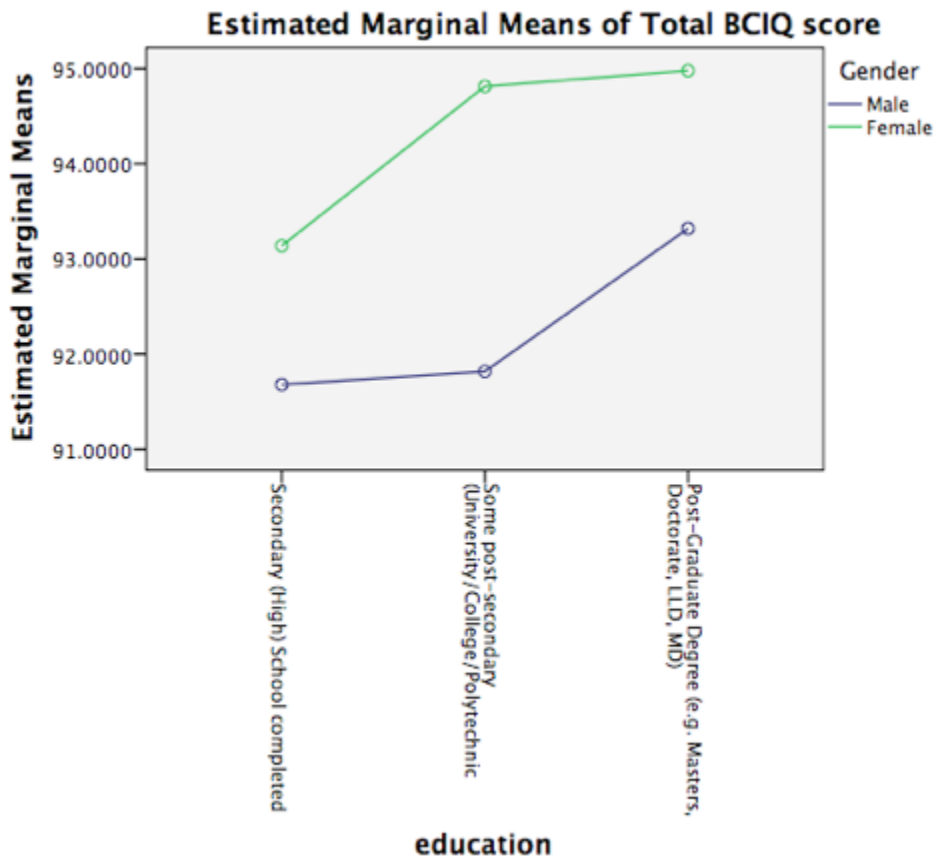
The plots presented in figure 8 shows that females have a higher score in all three levels of education. We can also look at the difference in male and female, where the largest increase is. For male it has the largest gap between Some-post secondary and Masters degree, but for female these two are almost the same. On the other hand, the secondary school completed is much lower in the female gender. Female with secondary school are almost at the same level of cultural intelligence as male with a masters degree.

5.1.2 ANOVA Test 2 - Global Knowledge

Table 6: Descriptive Statistics Global Knowledge

Descriptive Statistics

Dependent Variable: Global Knowledge

Education	Countries lived in	Gender	Mean	Std. Deviation	N
Secondary (High) School completed	None	Male	93.4730	7.1797163	21
		Female	90.9846	7.8920376	18
		Total	92.3245	7.5215717	39
	One to two	Male	99.0718	4.8187271	4
		Female	96.1391	7.9805610	7
		Total	97.2056	6.8825092	11
	Three to five	Male	93.4730	.	1
		Female	89.7405	.	1
		Total	91.6067	2.6392761	2
	Over five	Female	89.7405	.	1
		Total	89.7405	.	1
	Total	Male	94.3344	6.9475874	26
		Female	92.2288	7.8157882	27
		Total	93.2617	7.4080187	53
Some post-secondary (University/College/Polytechnic	None	Male	94.5928	16.5106862	10
		Female	92.8988	10.6462234	26
		Total	93.3693	12.3145697	36
	One to two	Male	90.2737	10.2057865	7
		Female	97.8276	7.2441231	6
		Total	93.7601	9.4502675	13
	Three to five	Female	97.2056	.	1
		Total	97.2056	.	1
	Total	Male	92.8143	14.0427613	17
		Female	93.9254	10.0397124	33
		Total	93.5476	11.4236638	50
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	None	Male	100.3160	10.1702852	12
		Female	101.2047	6.2909621	14
		Total	100.7945	8.1421760	26
	One to two	Male	94.7172	9.8754400	9
		Female	102.5610	9.4712483	23
		Total	100.3549	10.0830189	32
	Three to five	Male	97.2056	.	1
		Female	94.7172	8.6199550	3
		Total	95.3393	7.1472891	4
	Total	Male	97.8842	9.9514831	22
		Female	101.4980	8.4757993	40
		Total	100.2157	9.1138177	62

From the descriptives in table 6 we can see that the means of global knowledge increases for each of the levels of education. In the first two categories it is quite even, but the students at master level scored significantly higher than the others. From the standard deviation we get information that the variance varies more in this BCIQ dimension, especially in male with some post secondary education.

Table 7: ANOVA Global Knowledge

	Type 3 SS	Df	F-value	P–value (sig.)
Education	228.325	2	1.265	.285
Countries Lived in	58.410	3	.219	.885
Gender	.824	1	.009	.924
Education*Gender	80.271	2	.888	.473

R Squared = .176 (adjusted R Squared = .081)

* Significant < .05

Looking at table 7 we can see that the independent variable *education* is not statistically significant, with F-value 1.256 and p-value .285 > .05. This means that there is not an adequate difference in the levels of education to be statistically significant. *Gender* did not come out as statistically significant with F-value .009 and p-value .924, and neither did the interaction between the two variables with F-value .445 and p-value .642.

The number of countries lived in for more than six months is neither statistically significant different from each other, with p-value .885.

Education did not come out as significant in the "test of between" - table, but the students with a Master's degree has a remarkably higher score in global knowledge than the other two levels of education.

From the adjusted R squared we can see that the model has an explanatory power for 17.6 % of the variance in the means.

Table 8: Global Knowledge Post-hoc – Scheffe

Multiple Comparisons					
Dependent Variable: Global Knowledge					
Scheffe					
(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
					Lower Bound
Secondary (High) School completed	Some post-secondary (University)	-.285926	1.873183	.988	-4.918124
	Post-Graduate Degree (e.g. Masters)	-6.953956*	1.777459	.001	-11.34943
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	.285926	1.873183	.988	-4.346272
	Post-Graduate Degree (e.g. Masters)	-6.668030*	1.805979	.001	-11.13404
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	6.953956*	1.777459	.001	2.558473
	Some post-secondary (University)	6.668030*	1.805979	.001	2.202021

Looking at the Post-hoc and Scheffe results from ANOVA test 2, we can see that students with a Master's degree are statistically significant different from both the other educational groups with a p-value of .001. Comparing the two other groups together they are not statistically significant with a p-value of .988. The mean difference shows that the master degree students scores 6.953 higher than the group with just high school completed, and 6.668 higher than the group with some post-secondary school.

Figure 9: Estimated Marginal Means of Global Knowledge
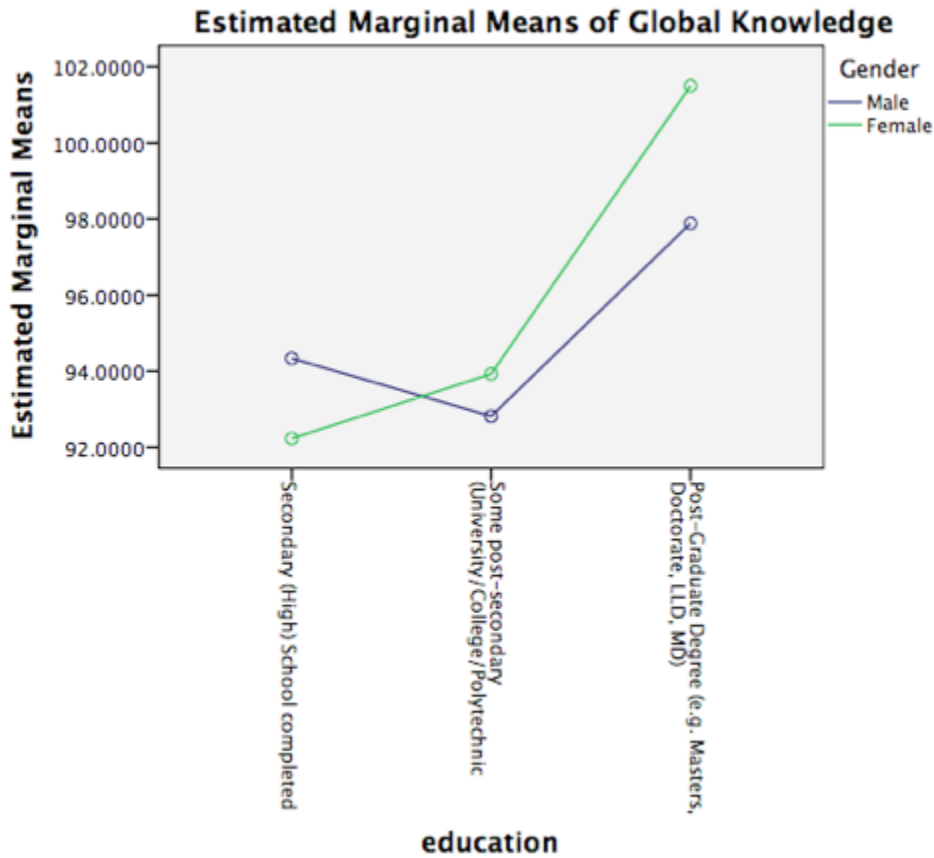
In figure 9 we observe that females with no higher education gets the lowest score, and females with higher education gets the highest score. For males, the group with some post high school scores surprisingly lower in knowledge than the group with the lowest education.

5.1.3 ANOVA Test 3 - Motivation

Table 9: Descriptive Statistics Motivation

Descriptive Statistics					
Dependent Variable: Motivation					
Education	Countries lived in	Gender	Mean	Std. Deviation	N
Secondary (High) School completed	None	Male	86.4038	7.4046711	21
		Female	88.6853	5.0832271	18
		Total	87.4568	6.4610223	39
	One to two	Male	89.2528	12.0334899	4
		Female	91.5460	7.9418815	7
		Total	90.7121	9.0897820	11
	Three to five	Male	68.8230	.	1
		Female	95.0900	.	1
		Total	81.9565	18.5735738	2
	Over five	Female	111.1420	.	1
		Total	111.1420	.	1
	Total	Male	86.1659	8.6511939	26
		Female	90.4959	7.1570260	27
		Total	88.3717	8.1467477	53
Some post-secondary (University/College/Polytechnic	None	Male	86.4802	11.3962585	10
		Female	91.8346	6.1678543	26
		Total	90.3473	8.1538622	36
	One to two	Male	95.0899	6.6339562	7
		Female	99.7110	8.4797159	6
		Total	97.2227	7.5970043	13
	Three to five	Female	89.2529	.	1
		Total	89.2529	.	1
	Total	Male	90.0254	10.4228097	17
		Female	93.1884	7.1348435	33
		Total	92.1130	8.4266413	50
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	None	Male	86.8207	10.6933168	12
		Female	86.2300	7.4510899	14
		Total	86.5026	8.9035169	26
	One to two	Male	89.4150	8.5850903	9
		Female	96.6761	8.6881023	23
		Total	94.6339	9.1428023	32
	Three to five	Male	95.0900	.	1
		Female	90.2257	7.4883933	3
		Total	91.4417	6.5802262	4
	Total	Male	88.2579	9.5890811	22
		Female	92.5362	9.4210320	40
		Total	91.0181	9.6259859	62

Again we can look at the descriptives table and see that the mean score increases in both genders, for every level of education. When males move from some post-secondary to Master's degree, the motivation for culture intelligence actually decreases.

Table 10: ANOVA Motivation

	Type 3 SS	Df	F – Value	P – value (sig.)
Education	160.339	2	1.249	.290
Countries Lived in	1365.909	3	7.094	.000*
Gender	365.103	1	5.689	.018*
Education*Gender	242.448	2	1.889	.155

R Squared = .273 (adjusted R Squared = .188)

* Significant < .05

Looking at table 10 we can see that there is not enough difference between the groups of education to be statistically significant with F-value 1.249 and p-value .290 > .05. The difference between the two genders is statistically significant with an F-value 5.689 and a p-value .018 < .05, meaning the females have higher motivational BCIQ than males. As the previous tests, the interaction variable is not significant with F-value 1.889 and p-value .115. *The number of Countries lived in* is statistically significant with F-value 7.094 and p-value .000 making it significant on 1 % level.

R squared is .273 giving the model 27.3 % explanatory power in variance from the means.

Table 11: Motivation Post-hoc – Scheffe

Multiple Comparisons					
Dependent Variable: Motivation					
Scheffe					
(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
					Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-3.741247	1.579390	.064	-7.646923
	Post-Graduate Degree (e.g. Masters)	-2.646326	1.498679	.214	-6.352413
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	3.741247	1.579301	.064	-.164429
	Post-Graduate Degree (e.g. Masters)	1.094921	1.522265	.773	-2.670631
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	2.646326	1.496799	.214	-1.059762
	Some post-secondary (University)	-1.094921	1.527265	.773	-4.860474

The post hoc results presented in table 11 shows that the difference between secondary completed, and some post-secondary education has p-value .064, making it statistically significant on a 10% level, but due to the number of observations (n=165) we have, this is not sufficient. It is still showing us that if the number of respondents were a lot higher, the significant level would possibly be under .05, but this is only speculation.

Figure 10: Estimated Marginal Means of Motivation
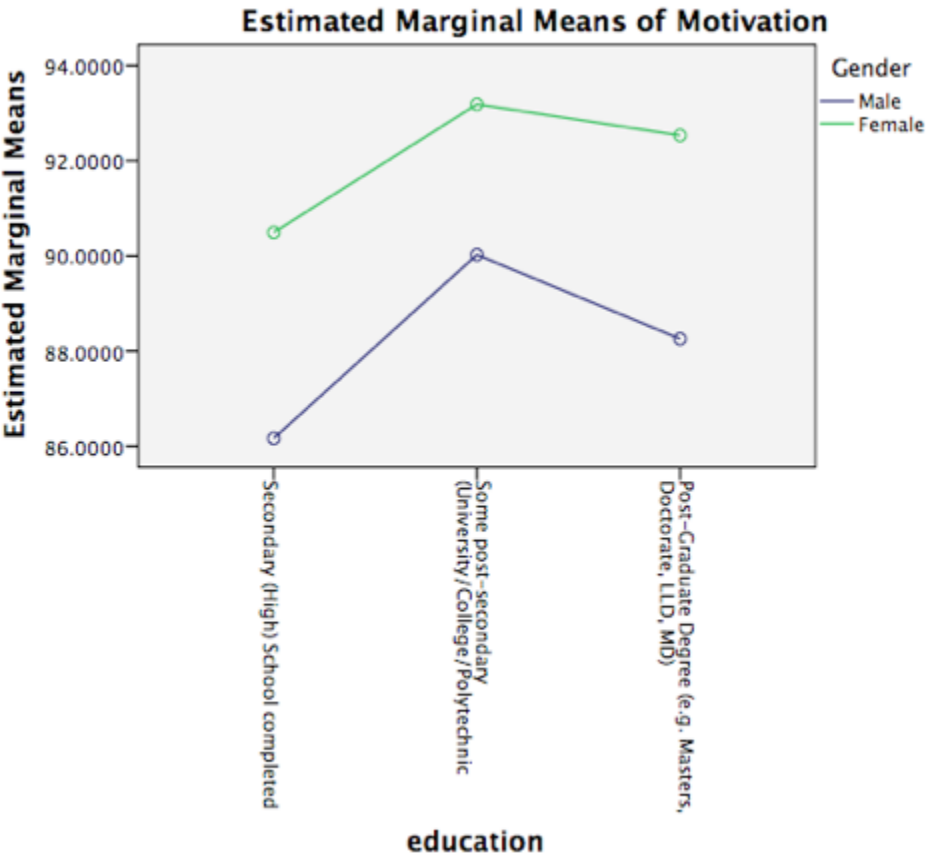
Figure 10 shows us that both male and female decreases and increases in parallel, but the gap between the two lines are quite large.

5.1.4 ANOVA Test 4 - Cognitive Preparation

Table 12: Descriptive Statistics Cognitive Preparation

Descriptive Statistics

Dependent Variable: Cognitive Awareness

Education	Countries lived in	Gender	Mean	Std. Deviation	N
Secondary (High) School completed	None	Male	95.4617	7.0142365	21
		Female	95.7619	5.6727885	18
		Total	95.6002	6.3493317	39
	One to two	Male	96.2394	5.1573389	4
		Female	91.2048	5.8598921	7
		Total	93.0356	5.9189813	11
	Three to five	Male	90.2225	.	1
		Female	100.5372	.	1
		Total	95.3798	7.2935943	2
	Over five	Female	103.9754	.	1
		Total	103.9754	.	1
	Total	Male	95.3798	6.6135597	26
		Female	95.0615	6.1252475	27
		Total	95.2176	6.3098013	53
Some post-secondary (University/College/Polytechnic	None	Male	98.4742	6.7218942	10
		Female	94.7186	6.7912963	26
		Total	95.7618	6.8900836	36
	One to two	Male	97.0989	10.6898840	7
		Female	103.9754	7.8403812	6
		Total	100.2727	9.7714220	13
	Three to five	Female	90.2225	.	1
		Total	90.2225	.	1
	Total	Male	97.9079	8.2918813	17
		Female	96.2654	7.7374623	33
		Total	96.8239	7.8845506	50
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	None	Male	97.6720	5.8336346	12
		Female	93.9063	4.9484543	14
		Total	95.6443	5.6010872	26
	One to two	Male	102.8293	6.8764604	9
		Female	96.8000	8.2225826	23
		Total	98.4957	8.2322777	32
	Three to five	Male	110.8519	.	1
		Female	100.5372	11.9103319	3
		Total	103.1159	11.0076681	4
	Total	Male	100.3809	6.9154148	22
		Female	96.0675	7.5568778	40
		Total	97.5980	7.5699024	62

In this test, table 12 shows us that the means are increasing by approximately 1 value for each level of education, and the students who have been abroad gets the highest score. Both genders gets almost the same score, but males with a Master's degree who has lived in three to five countries for more than six months stands out from the rest of the groups, with highest mean (110,85) and lowest Std. deviation. However, this is only one person so we can not put too much reliability into this information. Male with a Master's degree still has the highest total mean compared to the other groups.

Table 13: ANOVA Cognitive Preparation

	Type 3 SS	Df	F – Value	P – value (sig.)
Education	309.406	2	3.153	.046*
Countries Lived in	188.978	3	1.284	.282
Gender	10.414	1	.212	.646
Education*Gender	345.225	2	3.518	.032*

R Squared = .178 (adjusted R Squared = .083)

* Significant < .05

The differences between the groups are statistically significant for *education* with F-value 3.153 and p-value .046, meaning the level of education does have an impact on the cognitive preparation. *Gender* with F-value .212 and p-value .646, and *countries lived in* with F-value 1.284 and p-value .282 is not significant. The interaction variable *education*gender* is statistically significant for this dimension with F-value 3.517 and p-value .032, meaning that when combining the two independent variables they differ enough to be statistically significant. Male with a Master's degree stands out, but female with a Master's degree does not. Showing the differences in *gender* with *level of education* was the reason why this factor was included in the test. The model has a 17.8 % explanatory power on the variance when looking at the R squared.

Figure 11: Estimated Marginal Means of Cognitive Preparation
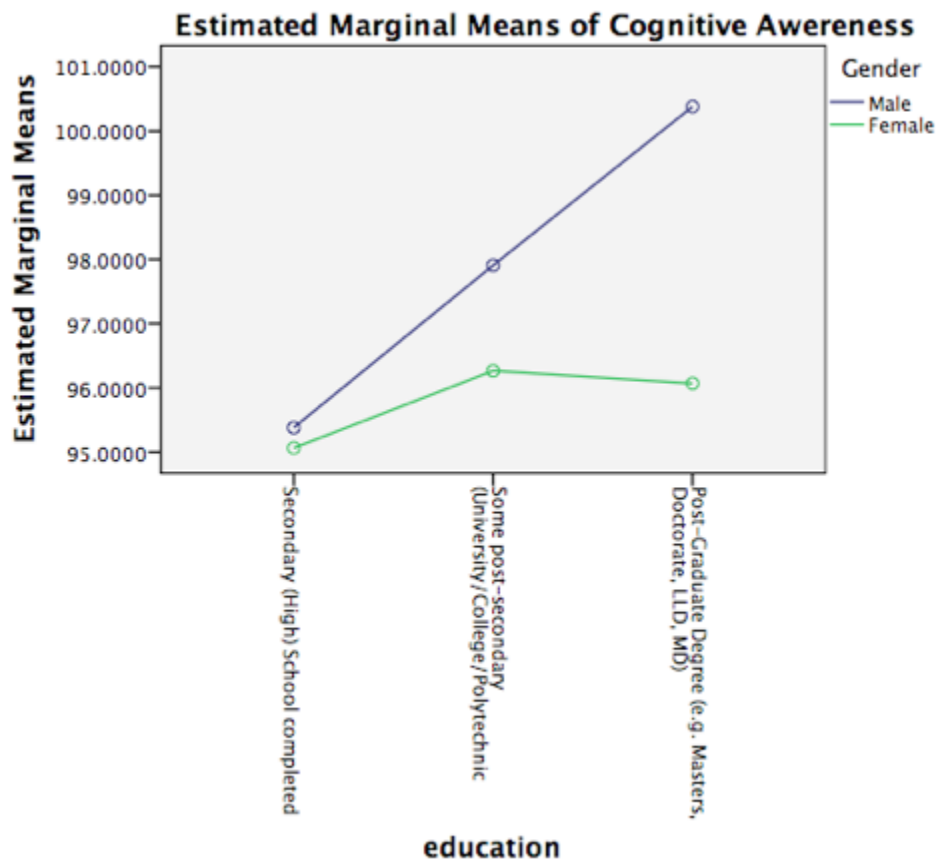
The plots presented in figure 11 give us information about the development of each gender's cognitive preparation BCIQ. There are huge differences where male has an even slope increase for the education levels, but female actually decreases from some post - secondary to Master's degree.

5.1.5 ANOVA Test 5 - Listening, Communication and Adaptation

Table 14: Descriptive Statistics Listening, Communication and Adaptation

Descriptive Statistics					
Dependent Variable: Listening and sensitivity					
Education	Countries lived in	Gender	Mean	Std. Deviation	N
Secondary (High) School completed	None	Male	90.2296	9.7683014	21
		Female	90.7963	7.0711079	18
		Total	90.4912	8.5247587	39
	One to two	Male	82.2002	7.5971319	4
		Female	92.6856	9.5628015	7
		Total	88.8727	10.0084516	11
	Three to five	Male	76.2490	.	1
		Female	84.1839	.	1
		Total	80.2164	5.6108216	2
	Over five	Female	111.9563	.	1
		Total	111.9563	.	1
	Total	Male	88.4566	9.9058656	26
		Female	91.8249	8.5182559	27
		Total	90.1725	9.2922772	53
Some post-secondary (University/College/Polytechnic	None	Male	88.9449	11.0331298	10
		Female	92.5766	8.4220473	26
		Total	91.5678	9.2026405	36
	One to two	Male	85.8842	14.6415873	7
		Female	93.4413	9.2763337	6
		Total	89.3721	12.5864280	13
	Three to five	Female	84.1839	.	1
		Total	84.1839	.	1
	Total	Male	87.6846	12.2993858	17
		Female	92.4795	8.4375234	33
		Total	90.8492	10.0574862	0
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	None	Male	85.8370	8.1937474	12
		Female	83.9005	9.7759870	14
		Total	84.7943	8.9557860	26
	One to two	Male	89.4739	11.9024542	9
		Female	92.4638	10.4226087	23
		Total	91.6229	10.7479257	32
	Three to five	Male	92.1189	.	1
		Female	96.0863	7.9349500	3
		Total	95.0945	6.7757523	4
	Total	Male	87.6103	9.6638197	22
		Female	89.7384	10.7739983	40
		Total	88.9832	10.3642947	62

From table 14 of descriptive statistics we see that this dimension of BCIQ overall has a lower score than the previous tests. It also stands out in the sense of not increasing as the level of education increases. The lowest score is actually the group with highest level of education.

Table 15: ANOVA Listening, Communication and Adaptation

	Type 3 SS	Df	F – Value	P – value (sig.)
Education	143.425	2	.770	.465
Countries Lived in	500.984	3	1.792	.151
Gender	234.595	1	2.518	.115
Education*Gender	93.038	2	.499	.608

R Squared = .149 (adjusted R Squared = .051)

* Significant < .05

Table 15 gives us the results of the ANOVA test *between groups*, and *education* comes out as not significant with F = .770 and p = .465. There are not adequate differences between the levels of education to state that it is significant. The independent variable *gender* is, on the other hand, closer to be statistically significant with p-value .115 and F-value 2.518. Females do have higher score in listening, communication and adaptation than males, and if the sample group had been larger it might have been statistically significant. Again the interaction effect is not present when the *education*gender* is not statistically significant, with F = .499 and p = .608.

In this dimension we can mention that the interaction effect between *education*countries lived in* are statistically significant with p-value .049. This is because the one person who has lived in more than five countries has a score of 111.95, but the total mean is 89.93. Since this is only one person from this group, thus does not represent a larger population, we can not draw any conclusions from this information.
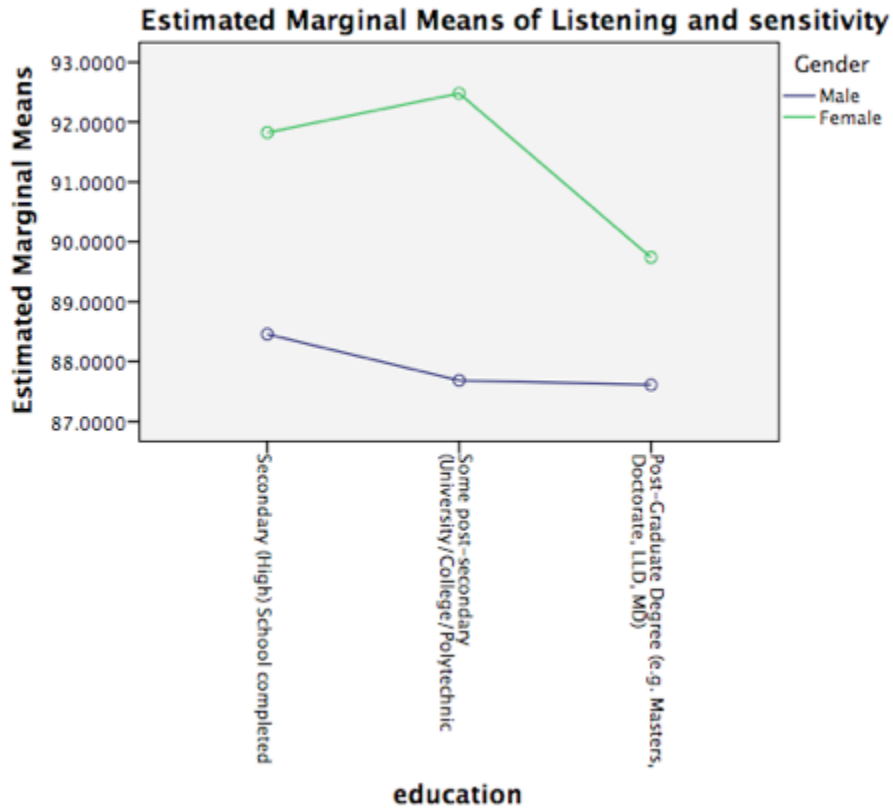
In figure 12 the decrease mentioned earlier is clearly shown, and both male and female decreases as the educational level increases. The drop in the female gender is the largest in the plots, and that is when females move from some post-secondary to a Master's degree.

6 Discussion of Results

In this part we will discuss the findings and results we got from the analysis, in light of the theory and previous research.

The focus of this thesis is the role of education and gender in cultural intelligence. The analysis performed in the previous chapter was conducted to reveal if there were differences between the genders, and/or the level of education. Five different analyzes were executed in this thesis and each of them tested if gender and the level of education had an impact on the different BCIQ dimensions.

Table 16: Significant Results

Dimension	Significant different variables
Total BCIQ	Countries Lived in
Global Knowledge	Education
Motivation	Gender Countries Lived in
Cogn. Prep	Education Education*Gender
List. Comm. Adpt.	Education*Countries Lived in

The results showed that neither *gender* nor *education* had a significant impact on the total BCIQ and we could not reject the null hypotheses. The *number of countries lived in* did have differences between the groups and this does not support the findings by Khodaday and Ghahari (2011), where the results stated that people who had been abroad did not have significantly higher CQ than the people who had. From the results we identified that the higher number of countries lived in for more than six months, the higher total CQ. When being abroad, making contact with local community, having co-students from other cultures, the cultural intelligence is

affected in a positive way and this shows how important it is to grasp the opportunity of studying abroad. The fact that *education* did not have a significant effect on the total BCIQ gets support from both Crowne (2008), who found that only education abroad had a significant impact on the CQ - not education itself, and Khodaday and Ghahari (2011). Most of the students who have lived in other countries for more than six months have probably done this during their period of education, in terms of exchange in one or two semesters. The results showed that *education* and *gender* were almost statistically significant, which is interesting. It lets us speculate whether or not the variables had become significant and reached the significant level if the test groups had been larger.

Education turned out to be significant in the global knowledge dimension, which describes the level of general knowledge about the culture, such as norms, customs, values and general facts. The students with a Master's degree had significantly higher global knowledge than both the other two levels of education. This dimension has similarities with the cognitive CQ, which is described earlier in the theory. Cognitive CQ refers to the knowledge about different cultures. Previous studies by Khodaday and Ghahari (2011) has shown *education* to have an impact on the cognitive CQ, and Crowne (2008) found education abroad to have an impact on the cognitive CQ. The reason why *education* have an impact on the global knowledge may be because the students have been abroad during education, but also exchange students coming, in this case to Norway, from all over the world. The Master program being mainly in English results in having co-students from different places of the world, thus from different cultures. These students will learn from each other during cooperation, and then gain knowledge about other cultures - both subconscious and conscious. This is a perk that should be in focus for the different universities. They should consider having as many courses as possible in English to attract more students from different countries and cultures.

The motivational BCIQ is affected by both *gender* and the *number of countries lived in.* Females demonstrated higher mean scores than male in motivational BCIQ in all levels of *education*. Mandell & Pherwani (2003) found that females had higher emotional intelligence than male, and this could be a reason why female also has higher motivational score, as motivation might be

driven by emotions to a certain extent. This is contrary to what Alon et al. (2016) found when they did the five-country analysis. They found no impact on the four BCIQ dimensions from *gender. Number of countries lived in* did also have an effect on the motivational BCIQ, and one reason may be that when living in another country and learning about a new culture it wakens the interest for learning more about other cultures, which further leads to developing the level of BCIQ. This is an important factor when people are going abroad, either for education or employment. Without the motivation and drive to learn when living in another country, the stay may not be pleasant for the expatriate or exchange student, and could therefore have a negative impact on the person.

When looking at the cognitive preparation BCIQ, which is the self-study of how to behave in an appropriate way in other cultures, two of the variables came out as significant; *education*, and the interaction variable *education*gender*. Crowne (2008) found that the level of education had an impact on the behavioral CQ, which is knowing how to act in certain situations in different cultures and can be similar to the cognitive preparation. The effect *education* has on the cognitive preparation probably comes from learning about other cultures when either being abroad or cooperating with other students in general. Cooperation will increase the knowledge about how to interact with other people on a general basis, and even stronger if the fellow students are from another country and culture than oneself. Our findings also get support from the study of Khodaday and Ghahari (2011), were they found that higher level of education had a positive effect on the behavioral CQ. The interaction variable *education*gender* was only significant in this BCIQ dimension, and it was males with a Master's degree who stood out from the rest of the combinations. In both the other two levels of education, the two genders were extremely even in the means of BCIQ. Alon et al. (2016) stated that females ranked lower than males in the cognitive preparation dimension, and we found that they were even, but males with higher education ranked the highest.

Education did not come out as significant different in the dimension of listening, communication and adaptation, nor did *gender*. In this variable we also included the interaction between *education*countries lived in,* because it was the only one coming out as significant. This

information needs to be treated with caution, because it was only one person who had lived in more than five countries and she had no higher education. The person can not represent the larger group, but it is something worth noticing, as it had such higher mean than the rest of the combination of groups. Although *education* did not come out as significant it is interesting to see that *education* had a negative impact on this dimension. When the level of education increases, the mean of listening, communication and adaptation decreases. This is of course affected by the extremely high mean of the person mentioned with no higher education, but both genders scored lower in this dimension when the educational level increased. This is the opposite of Alon et al.'s (2016) findings as they found that higher education led to higher BCIQ in all four dimensions of BCIQ. According to our findings, students who have been taking an education for five or more years has lower CQ in the dimension listening and awareness of communication, both verbal and nonverbal, and how to properly adapt and act when being in another culture. The reason may be that students find it difficult working and cooperating with people from other cultures, both when being abroad and in their home country, or maybe they had a bad experience when being abroad.

The aim of this thesis was finding what role education and gender plays in cultural intelligence. The answer we found is that the female gender has higher level of CQ in the motivational BCIQ and education has an impact on the global knowledge. Both of them could, in a larger sample group, have an impact on the total BCIQ, but the results in this thesis did not come out as significant. The most interesting finding was the fact that students with higher level of education had lower CQ in listening, communication, and adaptation. It would be reasonable to believe that students living abroad and working together with people from other cultures would have a higher understanding than the people who did not.

7 Conclusion

The main goal of this thesis was to identify the role of education and gender in cultural intelligence. To achieve this we started of by writing different theories about cultural intelligence and about the Business Cultural Intelligence Quotient referred to as BCIQ, and analyzing a dataset collected by questioning students at the University of Agder.

The global market is getting bigger every day, and the need for having the ability to interact and cooperate appropriately with people from other cultures is increasing, making this thesis extremely relevant for both individuals, companies and universities.

By analyzing students we found supporting arguments for higher education being a factor in further development of BCIQ. Companies working in a global market should be looking for people with higher score of BCIQ when searching for new employees, as this may lead to less failures and more success when operating in new cultural settings. As Lee and Sukoco's (2010) findings stated, experience from another culture alone does not have an impact on the performance level, only in combination with a high CQ.

Education turned out to have a significant effect on the global knowledge, but the BCIQ scores increased in all level of education except listening, communication and adaptation.

The results of the present study also showed that females did have higher motivational BCIQ than their male counterparts.

Not surprisingly, the number of countries lived in had an effect on the total BCIQ, and this emphasizes the importance for universities to market the opportunity the students have for exchange semesters. This is a chance not only to see another country, but also increase the BCIQ and the ability to adapt, understand and act appropriately in different cultures.

To conclude, *education* and *gender* have an influence on cultural intelligence. Females turned out to have higher BCIQ than males in general, and respondents on the higher educational levels proved to have higher BCIQ in general.

7.1 Strengths and Weaknesses in the Analysis

There are strength and weaknesses with all analyzes and this one is no exception. The dataset is collected by us, which makes our results unique and not tested before. I could have been beneficial with a larger test group and population to make the chance of being significant higher, as our dataset only contains 165 respondents.

We tested one group of first year students and one group of graduating students, but it would have been optimal to research the same group of people before and after the education when checking for an effect. When using ANOVA as the tool for analyzing the data we get information if there are any statistically differences. The weakness with ANOVA is that we can not see how large the differences are, and how much it affects the cultural intelligence.

The survey used in this thesis is scientifically approved, making the results from the survey accurate and trustworthy. The survey is developed and validated by Alon et al. (2016), and is a new instrument in the field of cultural intelligence, focusing on the business part of the field. An advantage with the test group, and the fact that it is mostly young students, is that they are not affected by work and employment. They have not been permanently employed for 10 or 20 years, which could have had an affect on their cultural intelligence, making our results better when looking at how the level of education affects the cultural intelligence. Not all students who participated were from Norway - some were exchange students coming from all over the world, and a diverse group of test takers strengthens our results.

7.2 Future Research and Recommendations

For future research we recommend to look into even more educational research, and see if different educations have different impacts on cultural intelligence. Our test takers were all students from the same education course "Business Administration" and for future research it could be interesting to check the differences between different types of education.

This study was limited in the area of data, in the sense that all data was collected from the same education and the same university. Future research may also focus on if education in different countries will have different impact on the cultural intelligence. Further research on gender as a factor for CQ is also recommended, for the reason being that there is extremely little previous research on this field.

Further on it would be interesting to examine the same research question in a completely different part of the world, for example in South America.

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Appendix

Reflection Paper

By Pia Wattenberg

The main object of our master's thesis was to identify the role of education and gender in cultural intelligence. Cultural Intelligence refers to the ability to function and manage effectively in culturally diverse settings, and our findings showed that both gender and education influences the level of cultural intelligence. Females had a higher BCIQ score than males, and individuals with higher educational level scored higher in the BCIQ test. The fact that education leads to higher CQ is something that should be very interesting for different universities, and should be something worth considering in their marketing.

Looking at internationalization, this topic is probably as international as it gets. The reason why this topic is so relevant today is indeed because of the rapid globalization that is affecting all parts of the world. As the global market increases the need for cultural intelligence increases as well. We are in contact with people from different cultures almost everyday, some through work, and others in daily life. For leaders it is crucial to have cultural intelligence, both when working with firms from other countries, and when managing their employees at home. Lack of cultural intelligence may lead to misunderstandings and then failures in for example joint ventures. Also a leader with CQ will carry out assignments quicker and be able to help and assist a diverse workforce even better.

This is a very new topic and like our discussion suggested, something companies should be focusing more and more on. Working in teams with diverse cultural backgrounds maximizes diverse perspectives, which again gives some of the greatest potential for innovation. Studies show that in teams where the CQ is high the generation of innovative ideas increases. They develop a coherent strategy, minimize conflicts and maximize the diverse perspectives, and this will result in good solutions. A suggestion for companies might be to both test the CQ of

possible employees and also maintain CQ by offering different courses on intercultural training. This will most certainly help companies towards greater success.

When working in a global market, you have responsibility to meet people with dignity and respect. All cultures have different norms and customs, and if an individual does not know of the basic rules of the culture in question, problems might arise. Therefore companies should both recruit people with high CQ, and also hold courses in intercultural training, so that their employees gain higher CQ, thus are more capable in a cross-cultural encounter. This will make their employees more comfortable when interacting with different cultures, and lead companies to success instead of failure.

Reflection Paper

By Arnfinn Mæland

The main theme of this thesis has been cultural intelligence, which is the ability to adapt and act properly in cross cultural settings and encounters. This is a new and growing field and getting increasingly important, since the world is getting smaller. In today's market it is not only the biggest global companies that have to cooperate with firms from other countries, but also small local companies. This makes the market more global and the importance of knowing how to act, negotiate and think when working in and with other cultures is becoming greater. The thesis was supposed to reveal any correlation and relationship between having a higher education and the cultural intelligence score. It was also supposed to see if there were any differences in gender when it comes to cultural intelligence.

The findings of the thesis showed that there were differences in the levels of education and between the genders. It also found that the number of countries lived in for more than six months had an effect on the cultural intelligence.

This is relevant for the internationalization of firms and individuals because we all need to cooperate in the most effective way with both people from our own culture and from other cultures. For example when a firm is expanding to a new country either through joint venture or franchising, there will most likely be some cultural differences in norms, laws, economy etc. By having a higher cultural intelligence it will be easier for the people who are in charge of the cooperation and negotiation, and they will be more effective than a person with low CQ. A Norwegian firm may have had success when expanding to Denmark, but might run into cultural problems if they try expanding to Turkey, Russia or Japan. Cultural intelligence will make a person more capable to adapt to the culture and act in an effective way.

The unit of analysis in this thesis was students at the business school at UiA and CQ will be important for them as well. Most of the students are likely to have a career, which at some point will come to an international encounter.

In form of innovation studies have shown that high cultural intelligence also leads to higher generation of innovative ideas. When knowing how to strategize, and minimizing conflicts the room for innovation will increase. The need for universities to focus on cultural intelligence is important because of the positive outcomes of having a high CQ. Universities, including UiA, need to continue the promotion local but also global, of the opportunities and studies at the school. A student with high CQ will be very attractive for employees when hiring, if they look for innovative and adaptable employees. It could be an option for employees to include a CQ test when hiring, to innovate the process and to find the correct people for expatriate work or working in multicultural teams.

There are possibilities for cultural intelligence to rise ethical issues and we all have a responsibility to not let this happened. Some may find it disturbing to take such a test to check their score, if they think they will score low. The topic of CQ must not become taboo, where people may rather not take the test because they are embarrassed of maybe getting a lower score than their colleagues or fellow students. A cultural intelligence test should only be an assistance tool for firms and companies to easier find people with abilities to cooperate in multicultural settings. The companies do have a responsibility to use the information and test with care. People may also have a responsibility to help research on the field and continue taking tests. When interacting with other cultures ethical dilemmas may arise. If a person does not know the norms and customs of something as basic as greeting a new associate or a supplier he or she might end up insulting them and the deal might be off. All parts taking part in a new cultural encounter has a responsibility to gain knowledge about the other cultures in question, and adapt accordingly.

Original ANOVA Tables from SPSS

Tests of Between-Subjects Effects

Dependent Variable: Total BCIQ score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1171.242[a]	17	68.897	2.476	.002
Intercept	238035.654	1	238035.654	8554.762	.000
EDUCATION	145.866	2	72.933	2.621	.076
COUNTRIES_LIVED_IN	336.655	3	112.218	4.033	.009
GENDER	90.636	1	90.636	3.257	.073
EDUCATION * COUNTRIES_LIVED_IN	174.086	4	43.521	1.564	.187
EDUCATION * GENDER	163.782	2	81.891	2.943	.056
COUNTRIES_LIVED_IN * GENDER	152.853	2	76.427	2.747	.067
EDUCATION * COUNTRIES_LIVED_IN * GENDER	99.228	3	33.076	1.189	.316
Error	4090.265	147	27.825		
Total	1450149.828	165			
Corrected Total	5261.507	164			

a. R Squared = ,223 (Adjusted R Squared = ,133)

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Multiple Comparisons

Dependent Variable: Total BCIQ score

Scheffe

(I) education	(J) education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-1.373265	1.0399506	.420	-3.944961
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-1.968125	.9868069	.141	-4.408402
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	1.373265	1.0399506	.420	-1.198430
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-.594860	1.0026404	.839	-3.074291
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	1.968125	.9868069	.141	-.472151
	Some post-secondary (University/College/Polytechnic	.594860	1.0026404	.839	-1.884571

Tests of Between-Subjects Effects

Dependent Variable: Global Knowledge

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2844.199[a]	17	167.306	1.853	.027
Intercept	240088.189	1	240088.189	2659.509	.000
EDUCATION	228.325	2	114.162	1.265	.285
COUNTRIES_LIVED_IN	58.410	3	19.470	.216	.885
GENDER	.824	1	.824	.009	.924
EDUCATION * COUNTRIES_LIVED_IN	320.672	4	80.168	.888	.473
EDUCATION * GENDER	80.271	2	40.135	.445	.642
COUNTRIES_LIVED_IN * GENDER	208.563	2	104.282	1.155	.318
EDUCATION * COUNTRIES_LIVED_IN * GENDER	113.971	3	37.990	.421	.738
Error	13270.481	147	90.275		
Total	1535532.519	165			
Corrected Total	16114.680	164			

a. R Squared = ,176 (Adjusted R Squared = ,081)

Multiple Comparisons

Dependent Variable: Global Knowledge
Scheffe

(I) education	(J) education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-.285926	1.8731836	.988	-4.918124
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-6.953956[*]	1.7774599	.001	-11.349439
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	.285926	1.8731836	.988	-4.346272
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-6.668030[*]	1.8059796	.001	-11.134040
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	6.953956[*]	1.7774599	.001	2.558473
	Some post-secondary (University/College/Polytechnic	6.668030[*]	1.8059796	.001	2.202021

Tests of Between-Subjects Effects

Dependent Variable: Motivation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3535.451[a]	17	207.968	3.240	.000
Intercept	224221.080	1	224221.080	3493.727	.000
EDUCATION	160.339	2	80.169	1.249	.290
COUNTRIES_LIVED_IN	1365.909	3	455.303	7.094	.000
GENDER	365.103	1	365.103	5.689	.018
EDUCATION * COUNTRIES_LIVED_IN	328.157	4	82.039	1.278	.281
EDUCATION * GENDER	242.448	2	121.224	1.889	.155
COUNTRIES_LIVED_IN * GENDER	118.924	2	59.462	.927	.398
EDUCATION * COUNTRIES_LIVED_IN * GENDER	403.800	3	134.600	2.097	.103
Error	9434.194	147	64.178		
Total	1364357.221	165			
Corrected Total	12969.645	164			

a. R Squared = ,273 (Adjusted R Squared = ,188)

Multiple Comparisons

Dependent Variable: Motivation

Scheffe

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-3.741247	1.5793901	.064	-7.646923
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-2.646326	1.4986799	.214	-6.352413
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	3.741247	1.5793901	.064	-.164429
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	1.094921	1.5227265	.773	-2.670631
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	2.646326	1.4986799	.214	-1.059762
	Some post-secondary (University/College/Polytechnic	-1.094921	1.5227265	.773	-4.860474

Tests of Between-Subjects Effects

Dependent Variable: Cognitive Awareness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1565.802[a]	17	92.106	1.877	.024
Intercept	255584.806	1	255584.806	5209.727	.000
EDUCATION	309.406	2	154.703	3.153	.046
COUNTRIES_LIVED_IN	188.978	3	62.993	1.284	.282
GENDER	10.414	1	10.414	.212	.646
EDUCATION * COUNTRIES_LIVED_IN	471.523	4	117.881	2.403	.052
EDUCATION * GENDER	345.225	2	172.613	3.518	.032
COUNTRIES_LIVED_IN * GENDER	23.827	2	11.913	.243	.785
EDUCATION * COUNTRIES_LIVED_IN * GENDER	397.996	3	132.665	2.704	.048
Error	7211.695	147	49.059		
Total	1548449.252	165			
Corrected Total	8777.498	164			

a. R Squared = ,178 (Adjusted R Squared = ,083)

Multiple Comparisons

Dependent Variable: Cognitive Awareness

Scheffe

(I) education	(J) education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-1.606234	1.3808792	.510	-5.021012
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-2.380396	1.3103133	.196	-5.620672
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	1.606234	1.3808792	.510	-1.808545
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	-.774163	1.3313375	.845	-4.066429
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	2.380396	1.3103133	.196	-.859879
	Some post-secondary (University/College/Polytechnic	.774163	1.3313375	.845	-2.518104

Tests of Between-Subjects Effects

Dependent Variable: Listening and sensitivity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2404.328[a]	17	141.431	1.518	.096
Intercept	218974.764	1	218974.764	2350.328	.000
EDUCATION	143.425	2	71.713	.770	.465
COUNTRIES_LIVED_IN	500.984	3	166.995	1.792	.151
GENDER	234.595	1	234.595	2.518	.115
EDUCATION * COUNTRIES_LIVED_IN	914.009	4	228.502	2.453	.049
EDUCATION * GENDER	93.038	2	46.519	.499	.608
COUNTRIES_LIVED_IN * GENDER	299.380	2	149.690	1.607	.204
EDUCATION * COUNTRIES_LIVED_IN * GENDER	44.289	3	14.763	.158	.924
Error	13695.659	147	93.168		
Total	1350544.332	165			
Corrected Total	16099.987	164			

a. R Squared = ,149 (Adjusted R Squared = ,051)

Multiple Comparisons

Dependent Variable: Listening and sensitivity

Scheffe

(I) education	(J) education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Secondary (High) School completed	Some post-secondary (University/College/Polytechnic	-.676711	1.9029548	.939	-5.382530
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	1.189277	1.8057097	.805	-3.276065
Some post-secondary (University/College/Polytechnic	Secondary (High) School completed	.676711	1.9029548	.939	-4.029109
	Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	1.865988	1.8346827	.597	-2.671002
Post-Graduate Degree (e.g. Masters, Doctorate, LLD, MD)	Secondary (High) School completed	-1.189277	1.8057097	.805	-5.654619
	Some post-secondary (University/College/Polytechnic	-1.865988	1.8346827	.597	-6.402977