Bibliometric Citation Analysis of Cultural Intelligence

ERIK LANKUT
NOORIA YARI

SUPERVISOR

Professor Ilan Alon

University of Agder, 2017
School Of Business and Law at UIA

Abstract

Purpose – The purpose of this paper is to identify the most influential contributions to cultural intelligence by a bibliometric citation analysis using HistCite, VOSviewer and CiteNetExplorer, in order to provide an objective and scientific future research direction.

Design/methodology/approach – The paper describes the development of cultural intelligence construct and its antecedents to and outcomes of CQ, the synthesis of three bibliometric citation tools to analyse a sample of 357 articles by 823 scholars in 199 different journals published between 1992-2017.

Findings – The analysis revealed 10 research clusters within the topic of Cultural Intelligence that can be categorized as the most relevant antecedents to and outcomes of CQ: 1) Validation of Cultural Intelligence; 2) Cultural Intelligence Hypothesis; 3) Experiential Learning & Global Leader development; 4) Expatriate Performance and Adjustment; 5) The use of EQ in Culturally Diverse Teams; 6) Mindfulness, Knowledge and Behaviour; 7) CQ moderating intercultural service encounters; 8) Emotional Intelligence Research; 9) Managerial and Cognitive CQ; and 10) Global Virtual Teams & Cross-Cultural training. We also include future research direction for each emerged research cluster.

Originality/value – This study is the first attempt of a citation analysis on the cultural intelligence research; The first integrated and synthesised use of three different citation tools to achieve objective and scientific results as close as possible; The first attempt of essentially unpacking the "DNA" of Cultural Intelligence.

Keywords Bibliometric, meta-analysis, Co-citation, Cultural Intelligence, HistCite, VOSviewer, CiteNetExplorer

1. Introduction

In a rapid globalized world, cultural interaction has become heavily standardized in different kinds of jobs and professions. The rapid development of globalization has led to a common practice of working and encountering foreigners either in a professional or personal setting (Alon et al. 2016). Despite how globalization have been existed for long, the following research within global interactions and factors are relatively new, namely the concept of Cultural Intelligence (CQ). CQ was first described by Earley & Ang, in their published book released in 2003, as the ability to adapt and become effective to cultural differences and interactions by the facets of metacognitive, motivational and behavioural intelligence (Earley & Ang, 2003). The CQ definition has been further expanded into including cognitive construct of intelligence (Ang et al. 2007), and as a second definition introduced by Thomas and colleagues as a system of three facets: cultural knowledge, cross-cultural skills and cultural metacognition (2008). Together they have spawned, and further encouraged, increased research on the ability of effective cultural interaction, resulting into a

multi-dimensional concept that stretches over a large variety of discipline: The Cultural Intelligence concept are to be found in international management, business, psychology, anthropology, education, nursing, political science, evolutionary sciences and sociology. A large focus of the existing research has been identifying the correlating relationships between predictors and outcomes of CQ that would be important in a professional setting, specifically the effects of CQ on expatriate performance, adjustment and effectiveness during assignments abroad. Research on determining what develops CQ, its antecedents, has also been in interest.

In this study, we explore how the research on CQ has evolved, formed and been conducted through a bibliometric citation analysis, and explore how the antecedents to and outcomes of CQ have been researched on. This is performed by combining citation and visualization tools *HistCite*, *Vosviewer and CitNetExplorer*. These visualization tools can construct and vizualise core relations of articles, scholars and journals to map the contribution to the field of Cultural Intelligence. In details, by using a bibliometric co-citation analysis we can demonstrate the interconnections amongst articles and research topics by analyzing how often an article is cited and co-cited by other articles, indicating a key research stream (Luukkonen, 1997; Nederhof, 2006). This study differs from previous reviews of CQ research (Ang et al. 2011; Leung et al. 2014; Ng et al. 2012; Ott & Michailova 2016) in the following ways: First, all articles that may have described or used the CQ construct in any discipline have been included in the analysis, in order to ensure there is no problem of excluding particular research conducted in any discipline (Ott & Michailova 2016) and to not exclude any antecedents to and outcomes of, mediators or moderators of CQ (Ang et al. 2011; Leung et al. 2014; Ng et al. 2012). Second, in addition to include both main conceptualization of CQ (Earley and Ang 2003; Ang et al. 2007; Thomas et al. 2008), we also account for those publications which relates to the aspects of cultural intelligence, as research have shown CQ can explain the same type of ability during cross-cultural interaction (Table 1), meaning publications that may have described aspects of CQ before its conceptualization are also included. Third, our review is the first attempt of achieving an objective form of analyzing a large sample of data through the method of bibliometric citation analysis, to address the limitation of traditional literature review methods: the selection of articles and journals for a review can be subjective to bias and human error due to time limits, or constraints to compile a certain number of published articles in selected journals within a particular research field (Ott & Michailova, 2016). Last, our study will present the latest update of the CQ research by including articles published up to 2017.

This article is structured as follows: We begin by discussing the theoretical perspective on the conceptualization of Cultural Intelligence, to which antecedents to and outcomes of CQ have been researched or found. Then we describe our method of integrating the citation tools to achieve a scientific approach of identifying 10 unique research clusters. Lastly, we present our findings of each research cluster, discuss each particular research cluster and provide specific questions for future research.

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1.1 Theoretical perspective on the conceptualization of Cultural Intelligence (CQ)

In international management field the relevence of culture have been described by many scholars, as intercultural capabilities that highlights an individuals effectivness in intercultural interctions (Earley & Ang, 2003). For instance, knowing about other cultures and countries (Redmond & Bunyi 1993; Spitzberg & Cupach 1984; Earley & Ang, 2003; Javiidan & Teagarden, 2011; Alon et al.2016); Linguisic abilities and skills (Imahori & Lanigan 1989; Thomas et al. 2008); social flexibility (Thomas et al. 2008; Bird et al. 2010); communication adjustment, and communication competencies (Gudykunst, 1993; Lloyd & Härtel 2010 ;Leung et al. 2014).

The need for developing an intelligence construct to describe the phenomena of effective cultural adaption led to the concept of Cultural Intelligence (CQ). Defined by Earley & Ang (2003), CQ is the ability to adapt and to become effective to cultural differences and interactions across cultures. The construct can explain the ability and capability of processing information in culturally diverse settings before adapting to a new cultural context. Earley & Ang's (2003) definition consists of three facets: cognitive, motivational and behavioural. However, an additional facet, *metacognitive*, has been introduced, making the four-factor construct of CQ as the current multidimensional construct scholars are most familiar with (Ang et al. 2007):

Cognitive CQ is the knowledge and information about other cultures, norms and practices that may be obtained through experience or learning. A higher level of cognitive CQ enables greater interaction with someone from a different culture, but also having a greater ability to include other perspectives and emphasize with other individuals (Ghonsooly & Shalchy, 2013). *Metacognitive* CQ is the capability of processing and storing cultural knowledge and information, and found to be positively related to expatriate adjustment (Gudmundsdottir, 2015) and facilitate direct and indirect knowledge sharing (Chen & Lin

2013). Previous work experience can further develop both the cognitive and meta-cognitive aspect, however the latter facet is difficult to change in a short period of time as it requires fundamental change of an individual mental structure and the way of thinking (Moon et al. 2013). Both meta-cognitive and cognitive can provide a stronger mental capability for a better cultural understanding (Jiang & Park 2012). *Behavioural* CQ is the ability of performing appropriate verbal and behavioural actions during cross-cultural interactions, that may enable individuals to be easier accepted by associated groups and experience better relationships (Lin et al. 2012). Behavioural CQ can help culturally heterogeneous groups to develop shared values when compared to culturally homogeneous teams, thus highlighting the potential of culturally diverse workforce (Adair et al. 2013). *Motivational* CQ can explain the willingness to understand and adapt to non-familiar cultural environments, the drive to seek cross-cultural interactions, and argued as the most important facet to expatriate adjustment (Huff 2013; Huff et al. 2014). Higher level of motivational CQ will have a strong wish to overcome the challenges and difficulties when facing unfamiliar situations and culture. Motivational CQ can compensate for low levels of cognitive or metacognitive CQ, by appreciating one's own culture while maintaining a cultural identity makes it important for adapting to different cultures (Zhao et al. 2013).

A second definition has been later introduced as the interrelated construct of knowledge, mindfulness and behavioural abilities that would together result into effective interaction across cultures (Thomas 2006). However, Thomas et al. (2008) had refined the definition to CQ as a system of three facets: cultural knowledge as the specific knowledge about values, beliefs and behaviour of cultures, but also of the individual, and the general knowledge of evaluating cultural differences and processes of cross-cultural interactions; cross-cultural skills that involve the process of perceived behaviour and interpretation, process of developing and maintaining relationships, and process of adaption for approaching different social encounters; and cultural metacognition as the cognitive ability of having a clear and conscious mind, able to be self-regulated, able to spring forth new knowledge, or foster intercultural creative collaborations (Chua et al. 2012).

Both CQ constructs are based on theories of intelligence and viewed as a multidimensional construct (Sternberg 1997), and argued as separate forms of intelligence that is distinguishable from social and emotional intelligence (Earley & Ang 2003). More importantly, outcomes of CQ has gained huge popularity and interest by multinational organizations: where aspects of CQ can lead to cross-cultural competence that may influence the success of international business (Crowne, 2008; Johnson et al., 2006); influence the level

of performance in individuals during cross-cultural adjustments (Huff 2013; Zhang 2013; Ramalu et al., 2012; Kodwani, 2012; Huff et al., 2014; Bucker et al. 2014, Chen et al. 2014; Alon et al. 2016); influence communication effectiveness, job satisfaction, reduced level of anxiety and decreased turnover rate of expatriates (Bucker et al. 2014; Kanwar et al. 2012); and display better cross-cultural negotiation in demanding tasks (Groves et al. 2015). Theoretical links between CQ and leadership performance outcomes suggests that CQ provides leaders with superior capabilities for assessing culturally diverse work settings and adapting their leadership style accordingly, and a better understanding of the dynamics of culturally diverse settings, such as the ability to overcome the miscommunication and misunderstandings among partners, suppliers, and customers that often characterize failed international joint ventures(Alon & Higgins, 2005; Mannor, 2008). CQ can also moderate and strengthen adjustment and performances outcomes of transformational leadership (Lee et al. 2013), and predict greater ability to lead and manage in multicultural environments (Keung & Rockinson-Szapkiw, 2013). CQ has also been found to predict outcomes in culturally different settings but not in culturally homogeneous contexts where no cultural boundaries need to be bridged, displaying its important role in leadership development in cross cultural environment (Rockstuhl et al. 2011).

As CQ is a form of intelligence construct, research has dedicated effort into how the antecedents to CQ can increase either facets to CQ (MacNab & Worthley, 2012). Alon and colleagues (2016) have also suggested that any amount of previous expatriate experience, level of education and amount of languages spoken can contribute to higher cultural intelligence, with variances of CQ level across different countries. Empirical Studies have found that the level of CQ can be increased as a consequence of individuals taking part in cultural training, aiming to prepare for cultural differences and contexts and to provide empirical evidence on the effectiveness of cross-cultural training (Rehg et al., 2012; Engle & Crowne, 2014; Bucker & Korzilius, 2015; Bucker & Korzilius, 2015; Sahin et al 2014). However, the training must be fitting and long enough in order to attempt any influence on changing CQ levels (Lopes-Murphy, 2013). International work experience, having a second language or obtaining degrees from abroad are factors that may contribute the most to higher CQ (Ahn and Ettner 2013). The level of CQ development within institution based education can become a function of the teacher's own level of CQ (Goh, 2012). The positive effect may also in return benefit the academic member's themselves (Nikpour, 2013), and develop a more committed staff from obtaining higher leadership skills through CQ (Anvari et al.

2014). Pre-departure learning and post-immersion reflective assignments can also become tools to prepare individuals for expatriate assignments (Tuleja 2014).

2. Data and design

The method of Bibliometric citation analysis can be considered as a "meta-review" of a selected literature. Understanding the principles of citation analysis provides the foundation to attempt to identify important antecedents to and outcomes of CQ in this study (Kim & McMillan, 2008). The analysis gives an overview of the connection between and among articles for a certain topic or by the amount of co-citations by published authors (Fetscherin & Heinrich 2015; Apriliyanti & Alon 2017). Data compiled from the analysis sheds light on the popularity and impact of authors and published work. The citation becomes the basic unit of analysis, and the authors who become the most cited may be considered as key players "shaping the field" and what the major key concepts in a certain field are (Kim & McMillan, 2008). This study uses HistCiteTM-, Vosviewer- and Citnetexplorer software for identifying citation and co-citation relationships of articles and mapping linkages between the articles. We use all three tools together for an integrated result, as each tool provides their own strength and weaknesses for a bibliometric analysis: Histcite measures accurate citation scores on each article, scholar, journal or institution; CitNetexplorer clusters each relevant research streams of importance; and Vosviewer checks for any relationships and similarities within each research streams. Within all three software, citation scores are either computed as total local citation (TLC) or total global citation (TGC). TLC is the amount of times a paper has been cited by any other paper within the data sample of 357 articles. TGC, however, reflects the number of times a paper has been cited based on the score given by the ISI Web of Knowledge database.

In technical terms, *Histcite* measures both direct and indirect citations, articles that are directly referenced in a paper or indirectly cited as "citations of citations"; citations that are not in the original paper cited (Fetscherin & Heinrich 2015). It can construct bibliometric tables of articles, journals and institution rankings, and construct citation maps providing an overview of emerging relationships and networks of scholars, The greatest strength of Histcite presents its data on extractable tables, with the option to include each article, scholar, journal or institution based on the local or global citation score computed. This enables us to create rankings of journals, investigating trending articles or count common keywords and

topics. The greatest weakness of Histcite is the limited construction of citation maps, as it can only map articles without being able to cluster or draw cluster lines between them, and not able to cluster a large amount of articles at once in a presentable manner.

Vosviewer "can be used to construct and visualize co-occurrence networks of important terms extracted from a body of scientific literature" (www.vosviewer.com). The greatest strength of Vosviewer is the ability to visualize relationships between articles, scholars, journals or institution, or to construct a keyword map. It also includes an option to cluster those units by similar topic or field in colourful nodes. The greatest weakness of Vosviewer is the cyclic property of citation counting and the lack of a timeline option of publishing date. Vosviewer has four different normalization settings (No Normalization, Association Strength, Fractionalization and LinLog/modularity) where association strength option is selected by default. We have decided to use the LinLog/modularity option in order to achieve a higher degree of clustering, resulting into clearer and structured group of clusters for better design and evaluation (Noack, 2007; Noack, 2009). Vosviewer can only count the global amount of citations from web of science.

CitNetExplorer (Citation network explorer) is based on Garfield's work on algorithmic historiography (van Eck & Waltmann, 2014). Each size of a circle corresponds to the counting amount for the unit of the conducted analysis. A citation map will count the amount of global citations for each document, source or author has, while a co- citation map will count the amount of cited references an author or journal has. Each colour in each node represent the similar topic of research for current unit of analysis. A line which is drawn from one node to another node visualise the current citation or co-citation within the bibliometric network. CitNetExplorer offers an advanced functionality for narrowing down a citation network.

In CitNetExplorer, citation networks must satisfy two conditions. The first condition is that citation relations are not allowed to point forward in time. For instance, a publication from 2013 is not allowed to cite a publication from 2014. The second constraint is that citation networks must be acyclic. This means that it is not allowed to have both a citation from publication A to publication B, and a citation from publication B to publication A. Likewise, it is not allowed to have a citation from publication A to publication B, a citation from publication B to publication C, and a citation from publication C to publication A. In other words, when moving through a citation network by following citation relations from one publication to another, we should never get back again at a publication that we have already visited. As prescribed by Van Eck & Waltman (2014), CitNetExplorer can handle a

much larger citation networks compared to HistCite and Vosviewer and can give a better visualization of the publications. CitNetExplorer do only count citations found within the sample – in another words, Citnetexplorer only counts the local citation score (TLC).

To collect our sample for the bibliometric analysis, we used the academic database *ISI Web of Knowledge* (known as *Web of Science*). To identify those publications that have either described antecedents to and outcomes of CQ, or any aspects of cultural intelligence, we searched for the topics of or combination of one of the following terms: cultural intelligence, cultural competence, acculturation, intercultural competence, cultural sensitivity, cultural development, cultural adjustment, acculturative stress, cross- cultural psychology and cultural meta cognition. We filtered out any articles and scholars that was not related to the concept of CQ in any form, ending up with a total sample size of 357 articles.

3. Findings

3.1 Leading Influences on Cultural Intelligence

When performing bibliometric reviews using Histcite, we are able to obtain data on the influence of institutions, journals and articles in terms of amount of citations received, to map key actors of leading the research. Looking at a national level of CQ contribution, the largest number comes from the US (125 papers), UK (39), Australia (36), Netherlands (23), Germany (22), People's Republic of China (PRoC) (22), Canada (17), Switzerland (16) and Singapore (12). As quality is not always reflected in the sheer amount of publications, measuring the total local and global citations received per country shows that the leading country is the United States with TGC of 2573 and TLC of 374, followed by Germany (TGC: 1307, TLC: 22), UK (TGC:1114, TLC:39), Singapore (TGC:505, TLC:12), Spain (TGC:503, TLC:11) and Netherlands (TGC:489, TLC:23).

An interesting feat of the cultural intelligence research is the vast diversity of both eastern- and western institutions that partake into further research of cultural intelligence. The most influential institutions in terms of quantity of contribution are Zurich University (11 papers), Nanyang Technological University (9), University of Sydney (9) and Tilburg University (9). If measured by TGC, the most influential institutions are: Max Planck Institute for Evolutionary Anthropology (535), Duke University (513), Nanyang Technological University (458), Zurich University (347) and London Business School (339).

In other words, the mentioned institutions can be regarded as the leading institutions of cultural intelligence research and this information becomes beneficial for academics to target the leading institutions for future research collaborations, projects or employment (Table 2).

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The articles in the sample were published in journal with vast research areas: Management (25% of total papers published); Psychology (22%), International relations (21%), Business (7%) and Cross-cultural relations (7%). Of the 199 journals, only five have published 10 or more articles related to CQ: Academy of Management learning & Education (AMLE: 18 articles), International Journal of Intercultural relations (IJIR: 16), Group & Organization Management (GOM: 12), Journal of Cross-cultural Psychology (JCCP: 12) and Philosophical Transactions of the Royal Society B-Biological Knowledges (PTRSBK: 10). If measured by quality of the publications when ranked by total local citations received per year (TLC/t), GOM ranks as the most influential journal on CQ research by 27.03, then followed by AMLE (17.48), IJIR (10.45), Organizational Behavior and Human Decision Processes (OBHD: 5.63), International Journal of human resource management (IJHRM: 5.18) (Table 3).

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By taking the amount of articles published from each journal as a measure for output (P_{CQ}), and the total local citations received per year (TLC/t) as a measure for impact on field of cultural intelligence relationships, the results can be explored further. We create a 2 x 2 matrix where x-axis represents TLC/t and y-axis represents the number of articles published by each journal that is relevant for the cultural intelligence research. To create and calculate the four main groups of journals that can be distinguished (Quadrant A, B, C, and D), we use the mean values of both variables: The mean value of the number of articles published by each journal in the sample is 1.8, and the mean value of TLC/t for the sample is 0.75 (rounded up to 0.8).

The main groups are illustrated in Figure 2 below. Quadrant B displays low focus but high impact on CQ; Quadrant C displays a high focus and high impact on CQ; Quadrant D displays high focus but low impact on CQ. Quadrant A is not displayed as 134 journals are to be found in this quadrant, and our focus is on impactful journals. 8 journals are to be found in Quadrant B, 19 journals are to be found in Quadrant C and 37 Journals are to be found in Quadrant D. See figures 2 and 3.

Results shows that there are 27 journals within quadrant B and C with above average impact while56 journals within quadrant C and D have above average output. Therefore, the most productive and influential journals in the CQ research are: GOM, AMLE, IJIR, OBHD and IJHRM. Appendix A displays the overview of each journal in Quadrant B, C and D only.

PLEASE INSERT FIGURE 1
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Finally, Histcite can determine the most influential scholars in the CQ research in terms of citations received (table 4). Accordingly, the top cited scholars are Ang et al. (2006) (TLC:69, TGC: 119), followed by Ng et al. (2009), Templer et al. (2006), Imai & Gelfand (2010) and Earley & Peterson (2004). A further look on the ranking reveals that all articles can be highly influencing towards the research for cultural intelligence and affecting the research field accordingly. It provides foundation and understanding of cultural intelligence not only related to that of business and organization but also to cognition, further illustrating the disciplinarity of the research area of cultural intelligence.

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Additionally, highlighting articles with increasing importance to the basis of cultural intelligence research provides insights into what direction the research is heading for. Articles that received more citations at the end of the time period studied can be computed as the ratio of local citations in the ending (LCSe). It allows researchers to identify emerging topics by confirming if the articles have been cited more recently and not only over a fixed period of time. Table 5 ranks the top 20 articles sorted by LCSe thus displaying trending papers. Top five articles are as similar to the overall most influential paper rankings, being the works by Ang et al. (2006), Ng et al. (2009), Earley & Peterson (2004), Templer et al. (2006) and Imai & Gelfand (2010).

PLEASE INSERT TABLE 5

3.2 Citation Mapping – The research clusters on Cultural Intelligence (CQ)

After loading the data downloaded from the Web of Science database into CitNetExplorer, we obtain a citation network consisting of 357 publications and 1067 citation relations. By controlling the resolution parameter from the default of 1.00 to 5.00 we can

identify 10 unique research clusters (Figure 3). Due to the minimum cluster size requirement of 10, 189 publications are not clustered. An increased resolution parameter provides more detailed clustering of the publications and find out more precisely the categorization of the publications (Van Eck & Waltmann, 2014). We can also identify largest activity per cluster, suggesting the research has increased in large amounts after the year of 2010 (figure 4.)

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By combining thorough content-analysis and examining relations of scholars with the vosviewer software, we suggest the emerged research clusters can be categorized as: 1) Validation of Cultural Intelligence (28 articles); 2) Cultural Intelligence Hypothesis (25); 3) Experiential Learning & Global Leader development (22); 4) Expatriate Performance and Adjustment (17); 5) The use of EQ in Culturally Diverse Teams (15); 6) Mindfulness, Knowledge and Behaviour (14); 7) CQ moderating intercultural service encounters (14); 8) Emotional Intelligence Research (12); 9) Managerial and Cognitive CQ (11); and 10) Global Virtual Teams & Cross-Cultural training (10). The clustered articles accounts for 83.1% of the total local citations received in the sample, that we believe displays a significant clustering result. For the following result analysis, we highlight the most contributing scholars per research cluster.

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3.2.1 Cluster 1 –Validation of Cultural Intelligence

The first research cluster consists of 28 articles that validates the four-facet construct of Cultural intelligence. The most influential publication is the "*personality correlates of the four-factor model of cultural intelligence*" by Ang et al. (2006), and it has been the most locally cited publication among all scholars in our sample of 69 times, and 119 times globally. The research cluster also includes the study on the motivational factors of cultural intelligence by Templer et al. (2006), cited 57 times locally and 90 times globally. These two publications are the predecessors of the first research stream. Within the research stream, Ang

et al. (2006) has been cited by 19 scholars, and Templer has been cited by 17 scholars. This stream includes publications on psychometric analyses of CQ (Ward et al. 2009; Sahin et al. 2014; Yunlu & Clapp-Smith, 2014; Al-Dossary, 2016), the culturally intelligent negotiator (Imai & Gelfand, 2010; Salmon et al. 2013), the research for antecedents of CQ (Moon et al. 2013; Froese et al. 2016;), metacognitive skills (Klafehn et al. 2013) personality factor (Ang et al., 2006; Depaula et al. 2016; Groves & Feyerheim 2011; Adair et al. 2013; Sahin et al. 2014; Li et al. 2016; Depaula et al. 2016), and motivational CQ (Ward et al. 2011; Bucker & Korzilius 2015; Chen et al. 2012).

In particular, Groves & Feyerheim (2011) did a direct follow up on both publications by Ang et al.(2007) and Ward et al. (2009), and expanded the prior research validity of CQ beyond EQ in predicting cultural judgement and adaptation. Thus, their finding added incremental validity of CQ beyond EQ. Similarly the publication by Ward et al. (2011) based their study on construct of cultural intelligence (Ang & Early, 2003), taking the base on cross cultural Psychology, and understanding the differences of manifestation of intelligence and took a step further to examine relationship between intelligence and intercultural effectiveness.

While the clusters from CitNetExplorer shows the predecessors and an overall acyclic linkage between the publications, Vosviewer gives a more in detail sub-clusters of all the publications that has similar approach, or an inter-relation to each other. Vosviewer divided the first research cluster from CitNetExplorer into four sub-clusters, each having a similar approach or being connected to previous publications.

For instance, some of the conceptual papers examined the impact of cultural intelligence and how it can be used in empirical research, such as the study on impacts of culturally intelligent team (Adair et al. 2013), followed up by conceptualizing the construct of communication context, using the multiplicity of the nonverbal, rational, spiritual and temporal cues, and developing a validated four-component measure with cultural intelligence (Adair et al. 2016). Likewise, we also found publications that examined the impact of CQ on international concepts within a foreign concept, task performance of international team, and intercultural negotiations (Imai and Gelfand 2010; Salmon et al. 2013; Charoensukmongkol 2015; Nel et al. 2015).

Accordingly the publications by Templer et al. (2006); Ward et al.(2009); Ward et al.(2011); Klafehn et al. (2013); Moon et al. (2013); Bucker et al. (2014) and Collins (2016) contributes to the empirical studies on cross-cultural adjustment that focuses on two relatively new and contemporary theoretical perspectives— CQ and realistic preview. It furthers the

theoretical developments of Earley and Ang's (2003) CQ concept, cognitive psychology, metacognitive, job effectiveness and performance, by using and validating Cultural Intelligence Questionnaire (CQS) and other Metacognitive subscales.

Some of the empirical studies such as; Chen et al. (2012); Sahin et al. (2013); Moyano et al. (2015); Al- Dusary (2016); Froese et al. (2016) and Lie et al. (2016), add value to the development of CQ by investigating the antecedents of cultural intelligence, applying case studies or limiting to international organizations, Multinational Corporations (MNCs) or a national context.

3.2.2 Cluster 2 – Cultural Intelligence Hypothesis

The second research cluster include publications that research into the cultural intelligence hypothesis within human and non-human evolution, and cognitive development (Figure 13). A total of 25 publications have been published between 2007 and 2016 and have been cited 50 times locally (4.9%) and 1,000 times globally (12.4% of the total). The most common keywords within this research stream are cultural intelligence hypothesis, social intelligence, social cognition and evolution. The earliest, and the most influential contribution (TLC: 21, TGC: 354), is Herrman et al.'s research on cultural intelligence hypothesis (2007), where the hypothesis was tested through a large number of close related primates to us humans and human children before reaching the level of literacy and schooling. It was discovered that the tested children and chimpanzees had similar cognitive skills during real world encounter but the children had higher cognitive skills than the other primates for dealing with the social world, contradicting the statement that humans are 'created' with general more intelligence, and that human beings are equipped with the unique ability to observe causal forces in general (Herrmann et al. 2007). This publication has been locally cited 21 times in total, where 17 of the publications are also within the same research cluster. This includes a follow-up study by Russell et al. (2011) that provided a comparison of performances between two groups of primates raised in different settings to control for rearing. Their results was similar to the data reported on the tested children from Herrmann et al.'s study (2007), however what elements would specifically foster the results has been called for future research (Russell et al. 2011).

The works by Reader et al. (2011) and Van Schaik & Burkart (2011) have also impacted the research stream for their contribution to the cultural intelligence hypothesis, cited locally 15 and 13 times respectively. Reader et al. (2011) explored the factors of culture through cognitive measures in primate species, and found that the relevant traits have coevolved in primates, creating an indication of a «general intelligence» within all species, and with elements of cultural intelligence. Van Schaik & Burkart (2011) reviewed previous empirical findings that had shaped the cultural intelligence hypothesis into confirming the efficiency of social learning. They also claim the hypothesis should predict the correlation between relative brain size and aspects of intelligence. The contributions have been cited among the research on cultural learning being culturally inherited (Heyes, 2012), how intelligence may facilitate higher cooperation among species (McNally et al. 2012), how Ostracism, the effect of ignoring or excluding information, reduced reliance on external advice in a decision making setting (Byrne et al. 2016) and supporting evidence of multi-personality traits among chimpanzees.

Because the nature of the CQ concept have derived from cognitive theories, the hypothesis that describe the human and non-human cognitive ability of social interaction has emerged within the fields of evolutionary science and primatology. Future research into the correlation of brain size with cultural intelligence may also be of interest for business or managerial scholars. Having confirmed whether CQ may be influenced already from the stages of early childhood may be of use to efforts into CQ education.

3.2.3 Cluster 3 - Experiential Learning & Global Leader Development

The third research cluster consist of articles that are related to the educational efforts directed at developing global leaders, global competencies, development of dimensions of cultural intelligence within global concept, and when and how global leaders develop cultural intelligence through education, learning and expatriate assignments. This research stream has a total amount of 22 publications and has been clustered mostly from management learning and educational journals between periods of 2004 to 2016 with a total global citation amount of 356 (4.4%). However, we find 11 publications from the journal *Academy of Management Learning & Education*, the journal with the most amount of publications related to CQ (18 records). The publication by Early & Peterson (2004) with a TLC (56) and TGCS(111), is one of the earliest publications and thus the predecessor of 15 publications. Ng et al (2009) with total local citation amount 41, and global citation score of 72, the second most

cited publication and a predecessor to 11 publications followed by Crowne (2008) which has been locally cited 19 times and globally cited 34 times.

The first sub-cluster consist with Ng and colleagues (2009) theoretical model that positions CQ as critical factor to examine whether experience leads to experiential learning and global leader development. This publication has been used as a main predecessor for the research on CQ and international leaders and thus suggested that the value of placing more explicit emphasis on intercultural contact and cultural intelligence when selecting leaders for jobs in culturally diverse groups is essential (Kim & Van Dyne, 2012). Similarly to these two studies, this research stream continued to develop on management learning literature by employing experiential learning theory to explain the learning process in the development of CQ from international experience (Li et al. 2013; Rosenblatt et al. 2013; Varela et al. 2014); the impact of culture on individual beliefs about knowledge and learning behaviors (Hardey & Tolhurst, 2014), and as well as the study on critical factors of international managers and learning strategy for developing international managers (Townsend et al. 2015; Holtbrugge 2016). This cluster consist of 9 publication out of which, 6 of them are from Management Learning and Education journals.

The second sub-cluster in this research stream focuses on development of expatriates through CQ training and CQ teaching suggests that training for the global manager should include metacognitive, motivational, and behavioral components (Earley & Peterson 2004), Management developments educator's competencies and CQ level while training new managers (Gilbert & Cartwright, 2008), and the impact of cross-cultural management education on CQ and satisfaction and commitment of students (Ramsey, 2016). By further conceptualization on CQ, Earley & Peterson (2004) had prepared the implications for training and education for global work assignments. In collaboration with scholars from Nanyang Business School and colleagues from the U.S and England, they focused on developing an CQ assessment tool in the form of paper-and-pencil method, noticeably succeeding with the CQS measurement scale by Ang and colleagues (Ang et al. 2006; Ng et al. 2008). With aims to also further expand the assessment method by the use of simulations, work samples or 360-degree feedback, we find contributions within the same cluster that have looked on the role of CQ in marketing adaption and export performance (Magnusson et al. 2013) and creation of equal knowledge across cultures through the 360 feedback processes (Shipper et al. 2007).

3.2.4 Cluster 4 - Expatriate Performance and Adjustment

The fourth research cluster relates to research into the cross-cultural encounters of work expatriates in order to provide practices and implications for international companies and researchers. The cluster has a total of 17 publications from managerial focused journals spanning between 2005 and 2017, with a total local citation amount of 84 (8.2%) and global citation amount of 315 (3.9%). Most common keywords within the research stream are expatriate adjustment, expatriate performance, cross-cultural adjustment and organisational support. The earliest publication, and has the most global citations, is Mol et al. (2005) revision on previous studies on expatriate job performances. With a total sample of 30 studies that had been conducted mostly on American expatriates in Asia, an important finding from the meta-analyses was that domestic relationships to the Big Five personality factors and job performance were discovered with expatriate performances.

Factors of personality predicted in high grade to expatriate work performance than domestic work performance. Along with the other findings surveyed, the authors believe the results can be put into a development of a valid predictor instrument, further strengthening the call for improved instruments of cultural intelligence measure. Additionally, the scholars had limited empirical data of expatriate job performances. The following research by Lee & Sukoco (2010) aimed to confirm the interrelationship between cultural intelligence, cultural effectiveness and cultural adjustment with expatriate performances in Taiwanese MNCs in Asia, and provided with empirical data that indeed confirmed the impact of CQ on expatriate adjustment. Lee has also contributed to expatriate performance research with studies into multiple intelligences of IQ, EQ and CQ (Lee 2010), effects of social support and transformational leadership (Lee et al. 2013) moderating effects of psychological contracts (Lee et al. 2014), and influence of capital factors (Lee & Kartika, 2014).

Ng & Earley's introductory framework of integrating culture and intelligence (2006) has the most local citations of 35 (global 51). More importantly, the scholars hoped to see innovative and challenging research on the previously "old constructs" of culture and intelligence done by selected scholars from both research areas. The publication was issued by the journal *Group & Organization Management (31(1)),* where all scholars add up to have been locally cited 286 times (28% of total). However, the only publication that are in the same research cluster and stems from the same issue of *Group & Organization Management* as Ng & Earley (2006) is the explorative study on the importance of intelligence, successful intelligence, by Sternberg & Grigorenko (2006). The scholars have contributed by finding

that intelligence must be understood in a cultural context, and the assumption of concepts and results discovered in one culture can be applied to another cultural context must be tested thoroughly. Thus, Malek & Budhwar (2013) tested the linkage between CQ, expatriate adjustment and performance in an eastern setting, while Shu et al. (2017) tested the *HEXACO* personality traits and CQ as factors of cross-cultural adjustment on international students in a Western setting.

3.2.5 Cluster 5 - The use of EQ in Culturally Diverse Teams

The fifth research stream in our sample consists of 15 publications that mainly deal with global team building and the importance of emotional intelligence (EQ) on a culturally diverse team. This research stream starts with a publication by Tett et al. (2005), however it's the publication by Moon (2010) on *emotional intelligence* that has the highest local citations score of 17 and global of 21, which is the direct predecessor of total five publications followed by Janssens & Brett (2006) publication. The total local citation score of this stream is 63 (6.2%) and the total global citation score 302 (3.7%).

The publications in first sub-cluster have focused on culturally intelligent team buildings in global context. The first publication is an empirical research on a model linking fusion teamwork to creativity in multicultural teams (Janssens & Brett, 2006), where the article introduces models of collaboration in global teams to enhance the likelihood of such teams making creatively realistic decision. This study points out why fusion as a model, is a more culturally intelligent model for team collaboration, producing superior solutions to global problems (Janssens & Brett 2006). This study was farther for introducing and testing the link between cultural metacognition as an antecedent for fusion teamwork and creativity (Crotty & Brett, 2012). The result from this study generated a consistency with the hypothesis that across teams, when team members were more highly culturally metacognitive, fusion teamwork and creativity were more likely. Other researchers continued developing and testing models that would effect team work, development of management students' cultural intelligence. The study by Erez et al. (2013) utilized methodologies exposed by the constructivism group-based experiential learning program, which were designed for

management students in multicultural virtual team contexts. Results demonstrated that personal global characteristics can be improved with global training programs, which consist not only of class material but also hands-on experience in working in multicultural teams. Yitmen (2013) examined how organizational CQ through competitiveness framework might potentially affect the strategic alliancing ability of contracting firms operating abroad, where the finding supported the hypothesis on the contracting firms leveraging their CQ as their main cross-cultural competence for increasing the performance of international strategic alliances. Nonetheless, Leung et al.'s (2014) study is a theoretical and empirical review on inter-cultural competencies, highlighting contemporary models and empirical research in organizational contexts, and examining research on selection, training and development of inter-cultural competence.

The second sub-cluster of this stream highlights the importance of emotional intelligence in teams and culturally diverse situations, and examines the relation between cultural intelligence (CQ) and emotional intelligence (EQ), in culturally diverse team set-ups. The stream starts with an approach to develop expatriate leadership effectiveness with a development process that underlies the emergence of effectiveness*; comprehensive, pragmatic, and heuristic*, by incorporating cognitive, attitudinal and behavioral factors (Deng & Gibson, 2009). This is followed with the research by Moon (2010) on relationship between CQ and EQ, and the four-factor model of cultural intelligence. The study demonstrates that the EQ factors related to social competence (social awareness and relationship management) explain CQ over and beyond the EQ factors related to self-competence (Moon, 2010). Lin et al. 2012 conducted a similar research on the effects of CQ and EQ on individual's adjustment in a different cultural environment where the result presented significant positive effects on cultural adjustment after controlling for gender, age, previous overseas experience, English ability, and host- country language ability. Another aspect of Emotional Intelligence and Cultural Intelligence was conducted to identify the risk perception safety behaviour asymmetries, and to develop a model that could be associated with the risk perception safety behaviour of employees in a culturally diverse organizations (Kubicek et al. 2013). Finally the work by Gunkel et al. (2014), examine the antecedents of emotional intelligence, by exploring the influence of cultural dimensions, in particular; *Collectivism, uncertainty avoidance, and long- term orientation* (Gunkel et al. 2014).

Sub-cluster 3 starts with publication that tests and examine emotional intelligence by Tett et al, (2005) which is a psychometric review on self-report emotional intelligence, where the researchers test and support that trait-EQ can be measured using self-report and

conceptualized as a distinct multidimensional domain. Yoo (2006) took the research a step further and tested the hypothesis in international students at three times during the school year and conducted recognition of anger and emotion regulation, which predicted a positive adjustment. The study also suggested that recognition of specific emotions might have special functions in intercultural adjustment, and that emotion recognition and emotion regulation play independent roles in adjustment. Similarly, Ponterotto (2012) examined 152 graduate education students at a university, and conducted his research on relationship between multicultural personality dispositions and trait emotions. Hence, this study suggested that The multicultural personality dispositions of *Cultural Empathy* and *Social Initiative* predicted variance in trait emotional intelligence above and beyond the variance accounted for by gender and potential socially desirable responding (Ponterotto, 2012). However the publication by (Matsumoto & Hwang, 2013) fell the gap in the literature and tested the validity of 10 researches and tests that measure cross-cultural competences, some of these testes contains the measurement of Emotional Intelligence, and thus has been the reason why this publication has fallen into this sub-cluster.

3.2.6 Cluster 6 – Mindfulness, knowledge and behaviour

Our sixth research cluster include 14 publications related to the third Cultural Intelligence concept by Thomas (2006), where the author introduced the consequence of attaining CQ from the factors of mindfulness, knowledge and behaviour. The contributions in this cluster have been locally cited 82 (8%) times and globally 217 times (2.7%) in total. Expectantly, the most locally cited study is in fact Thomas' development of CQ (2006), cited locally 38 times and globally 81. Thomas' introduced the concept of mindfulness as a key component linking knowledge and behavioural capability on top of the existing research on cultural intelligence. The potential for defining a reliable measure of a cross-cultural facet of intelligence has enormous implications for explaining and predicting the increasingly prevalent cross cultural interactions that occur in business settings. In this article, the author presents a definition of cultural intelligence (CQ) that explicitly introduces the concept of mindfulness as a key component that links knowledge with behavioural capability. The

advantages of the conceptualization of CQ presented here are that it (a) builds on the cognitive basis of other multifaceted forms of intelligence, (b) parsimoniously deals with the motivational influence of different self-concepts, (c) provides a clear metacognitive link (mindfulness) between knowledge and effective behaviour, and (d) defines the behavioural component in a manner consistent with the existing literature of cross-cultural interactions. Authors suggest that this framework will spark a productive dialogue concerning the most appropriate domain statement for CQ.

Consequently from Thomas' proposal, several studies have then spawned: a study that explored cultural intelligence within clinical social work practice (Edwards, 2016), mindfulness with ethics of intercultural knowledge-work (Huang et al., 2017), teaching in a different cultural environment (Kainzbauer & Hunt, 2016), teaching sexuality (Swanepoel & Beyers, 2015), role of metacognition with cross-cultural management skills (Mor et al., 2013) and also the impact of CQ on alcohol consumption (Arli et al., 2016). Edward propose to use CQ as a "lens" to encourage critical thinking to cultural differences, identity and interactions in cross-cultural clinical encounters. By using the concepts of knowledge, mindfulness, and behavior, social work practitioners may have the ability to consciously navigate the intersectionality of cross-cultural relationships. Furthermore, CQ should be further developed and researched to further establish empirical validation of the effectiveness in clinical practice and social work education (Edwards, 2016). Huang et al. reviewed the use of the ancient Eastern rooted concept of "mindfulness" in Western disciplines, but also the creation and development in the origins of eastern religious and philosophical thinking, to propose that all scholars and practitioners must adopt an intercultural ethic to regulate and guide such knowledge-work (Huang et al. 2017). The author's pointed out the interactional effect of development of West and East can cause contested understandings and issues of privileged knowledge, and therefore a similar intercultural ethic would foster, regulate and redistribute the contribution to knowledge of both Western and Eastern origin. Swanepoel & Beyers (2015) proposed to use Thomas' CQ concept of knowledge, mindfulness and behaviour for promoting an active nature of teaching sexuality within a multicultural environment, relevant to a pedagogy following the change of modern sexualities.

A study by Kainzbauer & Hunt (2016) explored the efforts of foreign university teachers in Thailand during an attempt to incorporate cultural knowledge in classroom teaching, by first conducting in-depth interviews with the teachers to gather empirical data that would fit a framework of CQ in a setting of teaching with different cultural backgrounds. Five main aspects of Thai culture was found to be relevant for the teachers to expand and

adapt the teaching methods, but it was also found a continuous dialogue interaction between teachers regarding student interaction and perception being closely related to the effect of mindfulness in accordance to Thomas (2006), that is the ability of displaying self-awareness, open-mindfulness and empathy during a cross-cultural interaction. Attempting this way of exploration on other settings would be highly regarded for any future researchers.

3.2.7 Cluster 7 - CQ moderating intercultural service encounters
The 7th cluster in our sample consist of a total amount of 14 publications that mainly develops and examine CQ, and Hofstede's cultural dimension to examine and develop behaviours that has an impact on service and on behaviours that serves people goals. This cluster has a total local citation score of 69 (6.8%) and a total global citation score of 142 (1.8%). This research stream has two main predecessors; Brislin et al. (2006) with total citation of (30), and Triandis (2006) with total citation score of (36). The publications in this cluster has fallen into 6 sub- clusters, each publication concentrating on different aspects of culture and cultural behaviours as main domain. The publication that has clearly linked, and cited each other or based their work upon the previous studies is the development of behaviours that can serve people's goals (van Emmerik & Euwema, 2009). People are assigned, or volunteer, for various types of overseas experiences, and they often encounter stressful situations that challenge their coping processes.Where the result suggest that adequate preparation includes considering behaviours in which people are likely to engage during their international assignment, introducing reasons for these behaviours as seen by people in the other culture, considering the emotional implications that accompany the behaviour, and using this new knowledge as a starting point for learning about other behaviours and broader concepts that will increase cultural competence levels (Brislin et al. 2006)

Piwowarczyk (2016) built her studies on the same concept and presents conditions of education in a multicultural society and defines the concept of cultural intelligence. Her finding category might help in becoming effective in different cultural conditions, in understanding foreign cultures and also in adopting standards and mastering the unfamiliar rules of conduct. Another study by Chipulu et al. (2016) conducts Hofstede's theories into cultural intelligence and finds that specific national cultural dimensions are the most salient cultural denominators for advertised project management positions, The findings raise issues about which organisations should seek to become more culturally intelligent, and which

relate to the adaptiveness of the cultural preferences that they articulate through their job advertisements (Chipulu et al. 2016)

Other publications in this cluster consist of cross culture in organizations (Triandis, 2006); Cultural Setting and cultural adjustment (Jyoti & Kour, 2015); Cultural intelligence and facets of group effectiveness, and Asia capabilities (Khani et al. 2011;Bice & Merriam, 2016); role of attribution and intercultural competence in intercultural service encounters, and definitions of culture and its relationship to language and cultural sensitivity in hospitality management services (Tam et al. 2014; Tabari, 2016) and as well a publications on Designing a Patient Care Model With Relevance to the Cultural Setting, and, Clinical and Translational Research and Community Engagement (Robertson-Malt et al. 2010; Martinez et al. 2012) .

3.2.8 Cluster 8 - Emotional Intelligence research

The eighth research cluster consist of 12 publications related to emotional intelligence, being cited in total 14 (1.4%) times locally and 497 (6.2%) times globally. In a sense, contribution from this cluster are only related to inclusion or verification of the antecedent of CQ concept, namely the personality factor of emotional intelligence. As reflected in the local and global citation score, other scholars who dismiss or do not acknowledge the relationship between EQ and CQ would "disregard" this research, leading to less cited publications related to EQ by scholars of CQ.

Earliest publication in this research cluster is the response to a previous EQ measurement study by Zeidner et al. (2001) acknowledging the need for a clearer definition of its concept before being able to fully provide meaningful instruments. The cluster also includes the examination of developing EQ in childhood to test EQ with individual differences in emotional function in children, proposing a model of competencies that describes the multifaceted nature of EQ. The scholars had called for future research into culture dependency of EQ, where cultural differences could relate to different traits of EQ (Zeidner et al. 2003).

Ghorbani and colleagues (2002) performed an assessment on self-reported EQ on Iranian and American university students to check for similarities in EQ across cultures, based on an information-processing model that had inputs, processing and outputs of emotions. Findings from both cultures were similar, except for self-consciousness in private

or public being greater in Iranian setting. The authors had also found a dissimilarity in the process of emotional information, namely the difference in levels of input, processing and output activities of the information-processing model between Iranians and Americans, suggesting subtle cultural differences exist in the processing of emotional information. A need for additional research into cross-cultural similarities and differences in the process of emotional information was therefore required and called for (Ghorbani et al. 2002).

Petrides & Furnham's paper (2003) on trait emotional intelligence has been cited 277 times globally, but only 5 times locally. Two experiments concerning trait EQ tested emotional recognition and reactivity to mood induction, in order to validate the construct. The first study had a selection of participants identifying morphed emotional expressions, and had found a negative relationship between time of identification and trait EQ as hypothesized. Second study had selected participants based on the Big Five traits for a mood induction experiment, and had found a positive relationship between sensitivity to the procedure and trait EQ as hypothesized. As the scholars argue, the conceptual and explanatory framework of trait emotional intelligence needs further inclusion and expansion of other variables.

3.2.9 Cluster 9 - Managerial & Cognitive CQ

The ninth cluster include research on managerial CQ under cross-cultural settings with a total of 11 publications. Only four of the publications have been cited locally in the sample with a total of 48 citations (4.7%). The earliest and the most cited contribution was Earley and Mosakowski (2004) survey of 2000 managers in 60 countries to test for CQ levels, finding that most managers are not equally strong in all three of these areas of cultural intelligence. However, the authors devised tools that show how to identify strengths, and they thereby developed trainings techniques to help people overcome weaknesses, avoiding the unnecessary complications of motivational facet of cultural intelligence and defined the adaptive skills of components in a manner that does not suggest mimicry, but is consistent with the existing literature on effective cross-cultural interactions, and allows for the

generation of unique responses and influence on the immediate interaction context (Earley & Mosakowski, 2004).

An interesting contribution from Hampden-turner & Trompenaars (2006) attempts to reply to the critics to CQ in order to illustrate the potentially "world-saving concept" (p. 57), by discussing the synergy-, complementary- and the latency hypothesis to three major objections of relative values, postmodernism and culture categorization. With the synergy hypothesis, cultural values can be regarded as relative and synergistic due to the fact that cultures can be both relative to environmental circumstances and capable of being valid universally. The rise of entrepreneurs in China displays both individualistic and communitarian values, two contrasting values that can synergise and therefore create a "productive culture", reflecting and confirming CQ with the synergy hypothesis. With the complementary hypothesis, cultures are not random or arbitrary but complementary, simplifying the tasks of understanding different cultures in the form of CQ. With the latency hypothesis, the acceptance of dominant cultural values can be recognized along the acknowledgment of subcultures, and that a culture can become intelligent by admitting its own latent values to complement the dominant values (Hampden-turner & Trompenaars, 2006).

Two studies that have followed Earley and Mosakowski's framework (2004) and also considered the views of Hampden-turner & Trompenaars (2006) have proposed that CQ moderates the relationship between senior-expatriate leadership and innovation adoption (Elenkov & Manev, 2009), and related to culture-sensitive theories of work-family interface (Powell et al. 2009). Based on tests with data from senior expatriate managers and subordinates from companies in countries of European Union, CQ was found to moderate the effect of leadership on organizational innovation, but not on product-market innovation. The findings also confirms the importance of cultivating high CQ for managers and subordinates to improve both organizational and product innovation to achieve higher leadership behaviours, in addition to achieve a higher capability of understanding foreign culture for behavioural adaption. Cultural intelligence will become a critical contributing factor for practical results of senior expatriate leadership (Elenkov & Manev, 2009).

Powell and colleagues (2009) address the limited use of cultural construct related to work-family literature by developing a framework of culture-sensitive theories to work-family interface for future research and testing. As a consequence of increased globalization leading to frequent use of expatriate employees and multicultural teams, managing the work-family interface has also become more challenging. Through the combination of previously

defined cultural dimensions from Hofstede (1980;2001) or Hampden-turner & Trompenaars (2000) with work-family conflict and work-family enrichment, a set of cultural-sensitive models has been developed as a framework for future researchers.

The invariance measurement of four-dimensional CQ construct that was examined by Schlagel & Sarstedt (2016) have cited and followed Elenkov & Manev's study (2009). As argued, prior studies had only tested antecedents and outcomes of CQ by data from different countries and cultures without controlling for measurement invariances. Schlagel & Sarstedt analysed the use of the four-dimensional CQ scale across the studied countries of China, France, Germany, Turkey and the U.S, with results confirming and invariance measurement of CQ in particular China and France. As advised researchers must be wary of comparing results of cross-country and cross-cultural research through the measurement of the four-factor CQ construct. Namely, cognitive CQ appears to be strongly culturally bound by the roots of cultural norms, values and beliefs, and a strong point for future researchers would be to ensure the level of cognitive CQ measurement can be equalized through proper translation, pilot testing and correct questions for respondents of such particular countries (Schlagel & Sarstedt, 2016).

3.2.10 Cluster 10 - Global virtual teams & cross-cultural training

The final research cluster include 10 publications focused on the development of CQ in global virtual team and cross-cultural settings, and been cited locally in total 42 times (4.1%) and globally 173 times (2.1%). The most locally cited publication is the conceptual study of cross-cultural competence in international business in order to understand the growth of the competence skill (Johnson et al. 2006). By linking the concept to cultural intelligence, their findings suggested that cross-cultural competence is barely defined within an international business context, encouraging future researchers to further improve the definition of cross-cultural competence. Before studying the concept of cultural competence, a clear definition that focuses on the performances outcomes of cultural competence rather than the knowledge facet would be easier to apply, test and measure in international business settings. The authors predicted a shift of emphasis towards behavioral outcomes of cross-cultural competence for future research. Consequently, publications within the research cluster have examined the use of learning theories to improve cross-cultural training programs in MNCs (Lenartowicz et al. 2014), the effect of cross-cultural training on CQ and

self-efficacy (Rehg et al. 2012), the use of global virtual collaboration in management education (Taras et al. 2013), development of CQ through a simulation game for international business students (Bucker & Korzilius, 2015) and development of cultural competencies through global virtual teams (Zwerg-villegas & Martinez-diaz, 2016).

Lenartowicz et al. (2014) answered for call of research into how cultural knowledge is created and fostered in MNCs by proposing a framework for effective transfer of such through relevant learning theories. Having examined 12 different cross-cultural training methods, the authors have defined the recommended learning cycle that would combine the various training methods in order to provide the most suitable knowledge transfer. The level of cultural knowledge transfer will then depend on available resources of budget and time within MNCs and adjust the recommended cross-cultural training method accordingly. As the authors have focused on primarily US-based MNCs, testing and validating the proposed framework on other national firms would be recommended for future research.

Study by Rehg et al. (2012) have found that the level of CQ can be increased as a consequence of individuals taking part in cultural training, aiming to prepare for cultural differences and contexts and to provide empirical evidence on the effectiveness of cross-cultural training, which in turn creates more effective expatriates during overseas assignments.

Taras et al. (2013) researched the effectiveness of global virtual collaborations in international management student named the "X-Culture Project", and their study has been featured as a Tedx Talk video *Crowdsourcing for Business Education and Business Consulting | Vas Taras* (2016). Multisource data was collected from over 6,000 student participants in 43 countries that had participated in virtual global teams as part of their international management courses. By evaluating the data consisting of feedback, valuation, assessment and performance with the basis of learning and contact theories, the findings displayed both positive outcomes for effective performance and collaboration and limitations of the virtual team projects for learning and education. The authors also tested for cultural intelligence and had found an improvement to students' perception of challenges related to virtual collaborations, reflecting a shift in the perception of different cultures and greater intercultural interaction effect. Despite promising results, the authors aims to test for similar results on a sample of corporate employees, and whether students' performances would be even better if completed similar setting as corporate employees, to test the idea of a crowdsourcing platform for education and consulting (Taras et al. 2013; Taras, 2016).

Bücker & Korzilius (2015) explored the development of cultural intelligence through a cultural simulation game named *Ecotonos*. They tested a behavioral training format to measure the impact of cross-cultural intervention on the CQ of students in business education, As the training literature depicts that behavioral training formats has a larger impact than knowledge-transferring training due to the practical behavioural learning, results into the CQ development was confirmed with increase in measured metacognitive, motivational and behavioural CQs. Greater confidence in cultural encounters was also to be found, but any increase of communication effectiveness was not found. Authors believe the participating students were more comfortable in the communication process, but not necessarily more strategic or effective in terms of meeting targets and goals. Enabling competition and define set targets could enable students' to participate with a strategic goal and motivation to benefit the most of the cross-cultural training. Bücker & Korzilius (2015) calls for greater testing ability through increased measurement, testing and inclusion of personality and anxiety being related to learning interaction, and explore the designated effect of CQ on communication effectiveness in an international business environment for future researchers.

Zwerg-Villegas & Martinez-Diaz (2016) explored the impact of global virtual teams for experiential learning in business education by testing groups of participants from the *X-Culture Project*. The authors looked for any impact on perceived challenges stemming from cultural differences in general, in the Global virtual team context, and administration and coordination of virtual teams. The Authors post-surveyed a participating group and control group of students and found a decrease in experienced difficulty of cultural interaction, suggesting an interactive effect between higher CQ leading to decreased cultural-related difficulties. The global virtual team activity itself led to a reduced perception of cultural-related difficulties for all participants, not only for those being in direct contact. However, the testing groups were limited to the fact that both were consistently different class with two different instructors, leading to a risk of biased instructor that may have influenced the experimental group. The authors advised improved internal design controls for future research.

4. Discussion, future research and limitations

Our analysis suggested that the following research on CQ has emerged the following streams, which we mold into relevant future research opportunities: 1) Validation

of Cultural Intelligence; 2) Cultural Intelligence Hypothesis; 3) Experiential Learning & Global Leader development; 4) Expatriate Performance and Adjustment; 5) The use of EQ in Culturally Diverse Teams; 6) Mindfulness, Knowledge and Behaviour; 7) CQ moderating intercultural service encounters; 8) Emotional Intelligence Research; 9) Managerial and Cognitive CQ; and 10) Global Virtual Teams & Cross-Cultural training. Overall, the research direction has been indeed to validate and identify all certain antecedents to and outcomes of CQ, in additional to create and construct valid instruments of measure for each facet or factor. Compared to traditional literature review methods, we have attempted a scientific and objective approach for identifying the possible future direction research that should be conducted for further strengthening the concept of CQ. Namely, we should include and check for further cultural or country dimensions, as most of the construct has already been verified on an individual basis. It exists a large research gap of determining macro or supra-national factors to CQ, however that research would be highly complicated and demanding. Instead, one should begin with examining country-determinants of cultural dimensions impacting firm or team-CQ. We believe our proposed future research questions would be highly significant for those who wish to conduct research in this field (Table 7).

PLEASE INSERT TABLE 7

In this study, we were limited to the sample data used in this study. Our sample was extracted from ISI Web of Science, which is still not a complete database of every single article. Some articles that may exist in other scholar search enginees, like Google Scholar, may not necessarily be found in ISI Web of Science. The given amount of citations may also differ between scholar search engines, whether or not the citations can stem from non-journal sources as Google Scholar includes, or citations that only stems from journals published on ISI Web of Science.

Citenetexplorer also includes the limitation of underrepresenting the most recent publications, as those publications simply have not been sited enough. The second limitation is that CitNetExplorer visualizes and comprises a number of articles that are not directly about CQ, these article might be review articles that tend to have many citation compounds, both inbound and outbound. Therefore there is a high possibility that they get included into the most frequently citations, without having a strong relation to the concept.

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LIST OF TABLES AND FIGURES

Table 1: Aspects of Cultural Intelligence

Aspects of Cultural Intelligence	Definition
Intercultural communication competence	The ability to effectively and appropriately perform communication behaviours that negotiate between a cultural identity or identities in a culturally diverse environment (Chen and Starosta 1999)
Acculturation	The process of cultural and psychological change that results following meeting between cultures. Adaption involves individual psychological well-being and how individuals manage socio-culturally. Adaptation is a consequence of acculturation (Sam and Berry 2010)
Cultural Sensitivity	An individual's ability to develop a positive understanding and appreciation of any cultural differences for fitted behaviour during intercultural communication setting (Chen and Starosta 1997)
Cultural development	The development in the ability of meeting cultural diversity through a progression from the ethnocentric stage (denial of the existence of other cultures) to the autocorrelative stage (integration of cultural knowledge in policy and practice) (Wells 2000)
Cultural adjustment (-shock)	Adjustment; the degree of psychological comfort and familiarity an individual has for the new environment (Black 1990). Shock; refers to the anxiety and feelings of disorientation and uncertainty that a person feels when he/she has to function within a different and unknown culture (Chen et al 2011).
Acculturative stress	Occurs during situational intercultural contact that give rise to threats, changes, conflicts, and challenges that cannot easily be resolved through simple behavioral adjustments, people that would perceive high cultural conflict and acknowledge the limited resources with which to deal with the situation (Berry 2005)
Cross-cultural Psychology	The comparison of psychological variables under different cultural conditions in order to map antecedents and processes related to behaviour differences (Eckensberger, 1972). "[…] Any type of research on human behavior that compares behavior of interest across two or more cultures" (Matsumoto, 1996, p. 5).

Table 2: 10 most influential institutions sorted by PCQ (left) and TGC (right)

Rank	Institution	P_{CQ}	TLC	TGC	Rank	Institution	P_{CQ}	TLC	TGC
1	Zurich University	11	10	347	1	Max Planck Institute for E.A.	5	28	535
2	Nanyang Technological University	9	241	458	2	Duke University	3	27	513
2	University of Sydney	9	53	204	3	Nanyang Technological University	9	241	458
2	Tilburg University	9	4	115	4	Zurich University	11	10	347
5	Max Planck Institute for E.A.	5	28	535	5	London Business School	5	156	339
5	London Business School	5	156	339	6	Yale University	5	16	306
5	Yale University	5	16	306	7	University of St Andrews	5	22	289
5	University of St Andrews	5	22	289	8	University of Cambridge	4	18	276
5	Michigan State University	5	138	243	9	Michigan State University	5	138	243
5	Utrecht University	5	16	169	10	University of Sydney	9	53	204
5	Kun-Shan University	5	3	52					
5	North-West University	5	2	31					
13	University of Cambridge	4	18	276					
13	University of California, Berkeley	4	6	201					
13	Columbia University	4	13	139					
13	National University of Singapore	4	12	98					
13	Kyoto University	4	2	95					
13	Victoria University of Wellington	4	48	71					
13	University College Dublin	4	18	48					
13	University of British Columbia	4	0	38					
13	University of Queensland	4	2	5					

Note:

P_{CQ}: number of articles published related to cultural intelligence research

TLC: total local citations received

Table 3: Ranking of 20 most influential journals (sorted by TLC/t)

Rank	Journal	TLC/t	TGC/t	PCQ	Scientific level[1]
1	Group & Organization Management	27.03	51.02	12	1
2	Academy of Management Learning & Education	17.48	50.76	18	2
3	International Journal of Intercultural Relations	10.45	23.31	16	1
4	Organizational Behavior And Human Decision Processes	5.63	12.29	2	2
5	International Journal of Human Resource Management	5.18	13.60	9	1
6	Journal of World Business	3.76	11.48	5	2
7	Journal of Cross-Cultural Psychology	3.55	23.50	12	1
8	Ceased: Cross Cultural Management - An International Journal Continued: Cross Cultural & Strategic Management	3.15	8.14	9	1
9	Journal of International Business Studies	2.95	21.00	4	2
10	Journal of Social Issues	2.71	4.57	1	1
11	Educational And Psychological Measurement	2.67	3.22	1	1
12	Journal of Managerial Psychology	2.50	6.88	4	1
13	Philosophical Transactions of the Royal Society B-Biological Knowledges	2.45	59.88	10	2
14	Harvard Business Review	2.36	6.29	3	1
15	Decision Sciences	2.10	6.40	1	2
16	Journal of Applied Psychology	2.00	8.83	2	2
17	Science	1.91	32.18	1	2
18	Business Horizons	1.90	3.40	1	1
19	Research in Organizational Behavior, Vol 24	1.81	4.50	1	1
20	Personality And Individual Differences	1.68	3.86	4	1

Note:
TLC/t: Average local citations received per year
TGC/t: average global citations receceived per year
P_{CQ}= number of articles published related to cultural intelligence research

Table 4: Ranking of top 10 articles

Rank	Author(s) and year	TLC/t	TLC	TGC/t	TGC
1	Ang et al. (2006)	5.75	69	9.92	119
2	Ng et al. (2009)	4.56	41	8.00	72
3	Templer et al. (2006)	4.33	52	7.50	90
4	Imai & Gelfand (2010)	4.13	33	7.13	57
5	Earley & Peterson (2004)	4.00	56	7.93	111
6	Thomas (2006)	3.17	38	6.75	81
7	Triandis (2006)	3.00	36	5.25	63
8	Ng & Earley (2006)	2.92	35	4.25	51
9	Rockstuhl et al. (2011)	2.71	19	4.57	32
10	Ward et al. (2009)	2.67	24	3.22	29

Notes:

TLC/t: Average local citations received per year

TLC: total local citations received

TGC/t: Average global citations received per year

TGC: Total global citations received

Table 5: Ranking of trending articles (sorted by TLCe)

Rank	Author(s)/year/title	Journal	TLCe	TGC/t	TLC/t
1	Ang et al (2006), Personality correlates of the four-factor model of cultural intelligence	GOM	23	9.92	5.75
2	Ng et al (2009), From Experience to Experiential Learning: Cultural Intelligence as a Learning Capability for Global Leader Development	AMLE	19	8.00	4.56
3	Earley & Peterson (2004), The Elusive Cultural Chameleon: Cultural Intelligence as a New Approach to Intercultural Training for the Global Manager	AMLE	17	7.93	4.00
4	Templer et al (2006), Motivational cultural intelligence, realistic job preview, realistic living conditions preview, and cross-cultural adjustment	GOM	15	7.50	4.33
5	Imai & Gelfand (2010), The culturally intelligent negotiator: The impact of cultural intelligence (CQ) on negotiation sequences and outcomes	OBHDP	15	7.13	4.13
6	Triandis (2006), Cultural intelligence in organizations	GOM	13	5.25	3.00
7	Brislin et al (2006), Domain and development of cultural intelligence - The importance of mindfulness	GOM	12	6.75	3.17
8	Thomas (2006), Cultural intelligence - Understanding behaviors that serve people's goals	GOM	12	4.00	2.50
9	Rockstuhl et al (2011), Beyond General Intelligence (IQ) and Emotional Intelligence (EQ): The Role of Cultural Intelligence (CQ) on Cross-Border Leadership Effectiveness in a Globalized World	JSI	12	4.57	2.71
10	Earley & Mosakowski (2004), Cultural intelligence	HBR	10	6.29	2.36
11	Earley (2002), Redefining interactions across cultures and organizations: Moving forward with cultural intelligence	ROB	9	4.50	1.81
12	Ward et al (2009), The Convergent, Discriminant, and Incremental Validity of Scores on a Self-Report Measure of Cultural Intelligence	EPM	9	3.22	2.67
13	Crowne (2008), What leads to cultural intelligence?	BH	9	3.40	1.90
14	Groves & Feyerheim (2011), Leader Cultural Intelligence in Context: Testing the Moderating Effects of Team Cultural Diversity on Leader and Team Performance	GOM	9	4.14	2.57
15	Ng & Earley (2006), Culture plus intelligence - Old constructs, new frontiers	GOM	8	4.25	2.92
16	Chen et al (2012), A Multilevel Investigation of Motivational Cultural Intelligence, Organizational Diversity Climate, and Cultural Sales: Evidence From US Real Estate Firms	JAP	8	6.50	2.00
17	Herrmann et al (2007), Humans have evolved specialized skills of social cognition: The cultural intelligence hypothesis	K	7	32.18	1.91
18	Moon (2010), Emotional intelligence correlates of the four-factor model of cultural intelligence	JMP	7	2.63	2.13
19	Elenkov & Manev (2009), Senior expatriate leadership's effects on innovation and the role of cultural intelligence	JWB	7	3.33	1.56
20	Chen et al (2011), The relationship between cultural intelligence and performance with the mediating effect of culture shock: A case from Philippine laborers in Taiwan	IJIR	7	2.86	2.00

Note:

TLC/e: trending local citations of the time period covered

TLC/t: average local citations received per year

TGC/t: average global citations received per year

For abbreviations of journal names see appendix A

Table 6: Overview of Research clusters

#	Research topic / key words	Publications	TLC_n	$TLC_\%$	TGC_n	$TGC_\%$
1	Validation of Cultural Intelligence	28	239	23.4%	419	5.2%
2	Cultural Intelligence Hypothesis	25	50	4.9%	1,000	12.4%
3	Experiential Learning & Global Leader development	22	157	15.4%	356	4.4%
4	Expatriate Performance and Adjustment	17	84	8.2%	315	3.9%
5	The use of EQ in Culturally Diverse Teams	15	63	6.2%	302	3.7%
6	Mindfulness, Knowledge and Behaviour	14	82	8%	217	2.7%
7	CQ moderating intercultural service encounters	14	69	6.8%	142	1.8%
8	Emotional Intelligence Research	12	14	1.4%	497	6.2%
9	Managerial and Cognitive CQ	11	48	4.7%	204	2.5%
10	Global Virtual Teams & Cross-cultural training	10	42	4.1%	173	2.1%
n_u	Unclustered	189	173	16.9%	4,444	55.1%
n_{rc}	All Research clusters	168	848	83.1%	3,625	44.9%
	All Research clusters + Unclustered ($n_{rc}+n_u$)	357	1021	100%	8069	100%

Table 7: Future Research Directions

Cluster 1: Validation of Cultural Intelligence	• Testing of new CQ assessment tools in different regions; what are the antecedents for higher CQ levels in certain regions? • Use empirical evidence in which developing an understanding of what leads to higher levels of CQ may have a positive influence on firms. In the increasingly global workplace, sensitivity to the cultures of others should facilitate conducting business. Therefore, it may be important for firms to consider the CQ of all their employees. • Further improve instruments of CQ measure: Develop a self-ability-testing measure based on Ang et al.'s self-report measure (2004), verify the BCIQ by Alon et al. (2016)
Cluster 2: Cultural Intelligence Hypothesis	• Future research into the correlation of brain size with cultural intelligence • Confirmed whether CQ may be influenced already from the stages of early childhood
Cluster 3: Experiential Learning & Global Leader Development	• Traveling, studying abroad and learning new languages have positive contribution on improvement of CQ. Does migration has the same (positive) effect on improving CQ, or does it have a negative correlation, due to the fact that the migration or moving to a foreign countries might be against the individual will? • Research into CQ education from early age: Will CQ increase during educational training from young age? Globalization, impact of the global situation on young generation?

	• The six fundamental skills Emotion regulation, Openness, Flexibility, Creativity, Critical thinking, Autonomy. Should CQ be an individual course to develop culturally competent future leaders?
Cluster 4: Expatriate Performance and Adjustment	• Further research on attempting the same performed research on different cultural contexts. E.g. Students V.s professionals, Intra-region CQ testing • An assessment tool for measuring expatriate-level CQ • Based on Lee, 2010. Investigate spiritual or religious intelligence
Cluster 5: The use of EQ in Culturally Diverse Teams	• Testing of cross-cultural competences; the effects of historical conflicts or religious conflicts in the performance of culturally diverse teams. • Does CQ Moderate the relationship between multi-cultural teams and the work performance in a business setting.
Cluster 6: Mindfulness, Knowledge and Behaviour	• Develop a framework of intercultural ethic to regulate and guide work of CQ development, to foster, regulate and redistribute contribution to knowledge of both Western- and Eastern origin. • Test efforts of foreign university teachers in different cultural settings or contexts, through conducting same methodology as Kainzbauer & Hunt (2016).
Cluster7: CQ Moderating Inter-cultural encounters	• Explore which type of organisations should seek higher CQ levels, to which relates to adaptiveness of cultural preferences (Chipulu et al. 2016)
Cluster 8: Emotional Intelligence	• Further research on the relationship between Emotional Intelligence and CQ: Build CQ framework using EQ theories
Cluster 9: Managerial & Cognitive CQ	• Explore the level of cognitive CQ measurement of different cross-cultural contexts, e.g. proper translations, pilot-testing, correct questions (Schlagel & Sarstedt 2016)
Cluster 10: Global Virtual teams and Cross-Cultural training	• Further research into cross-cultural team building: how these CQ measures can be applied for employee performance in a global context • Technology has made our daily lives simple by providing us all information that we need, does it affect the learning process, concentration level, experience levels to improve CQ? • The impact of level of technical skills on work efficiency in global virtual teams (GVT)

Figure 1: Journal focus and impact on CQ research
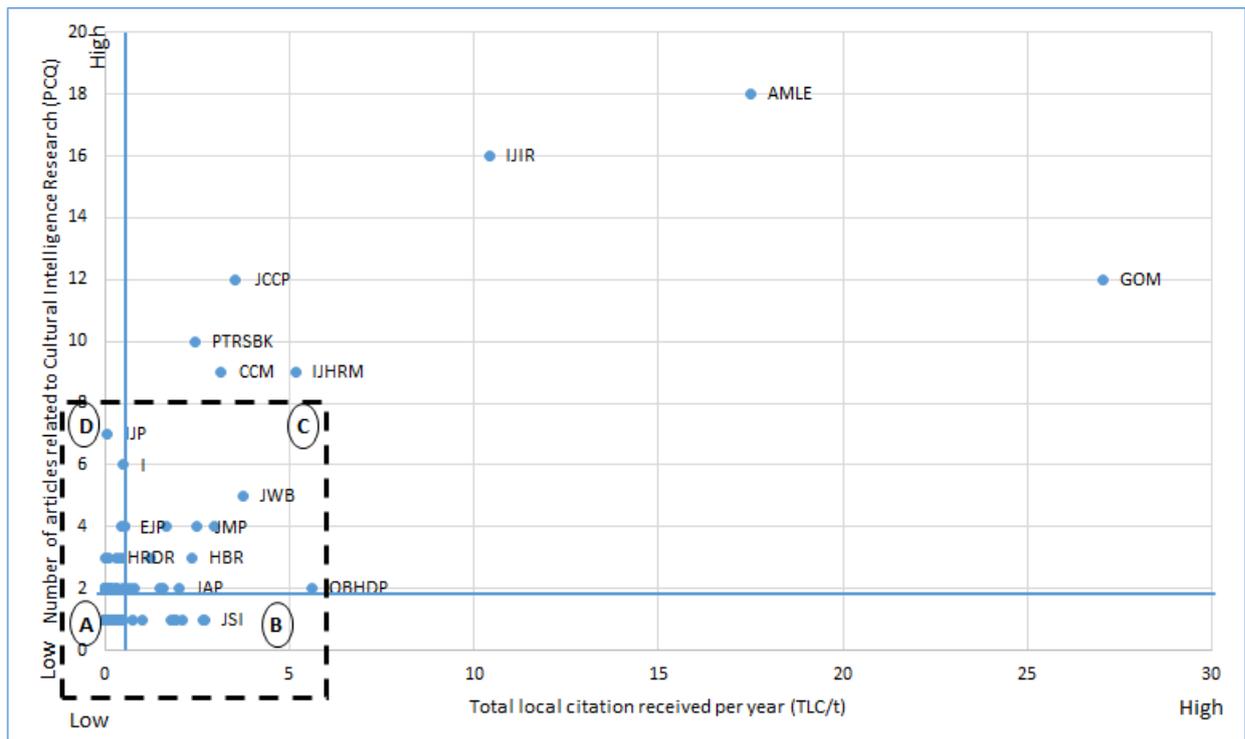
Note: for abbreviations of journal names see appendix A

Figure 2: Journal focus and impact on CQ research (detailed view)
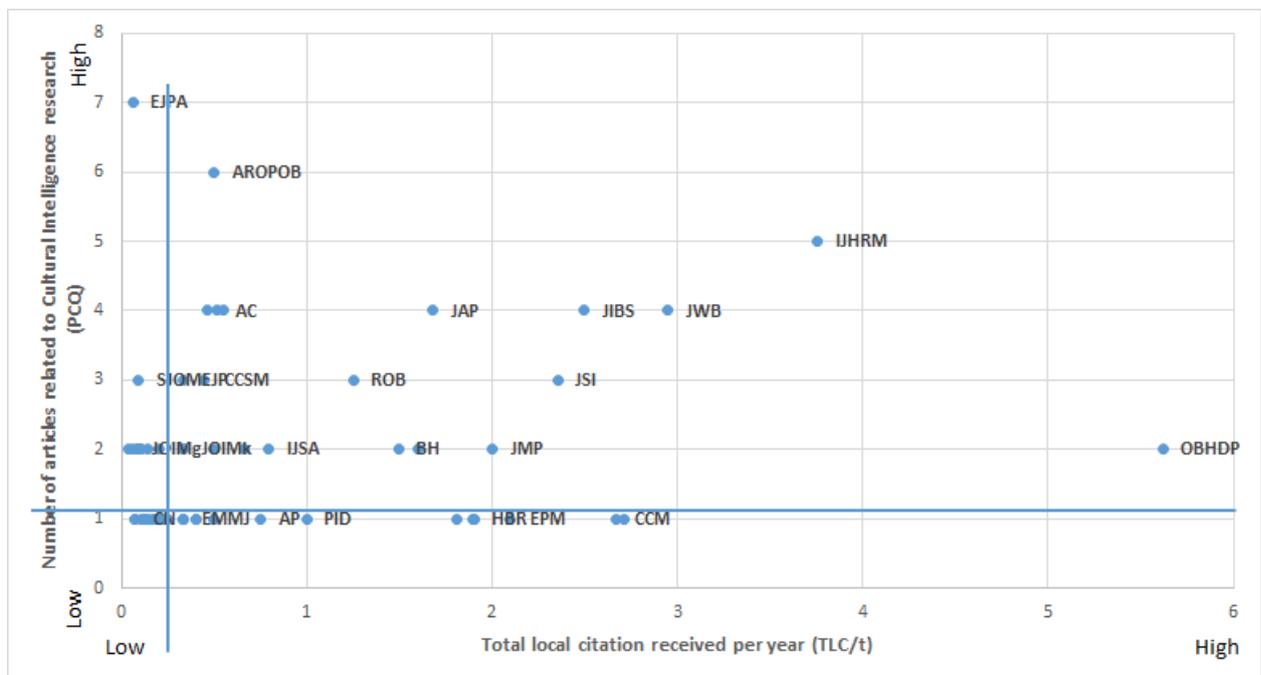
Note: for abbreviations of journal names see Appendix A

**Figure 3: Visualization of 10 coloured clusters (Resolution parameter:5.00, minimum cluster size 10)**
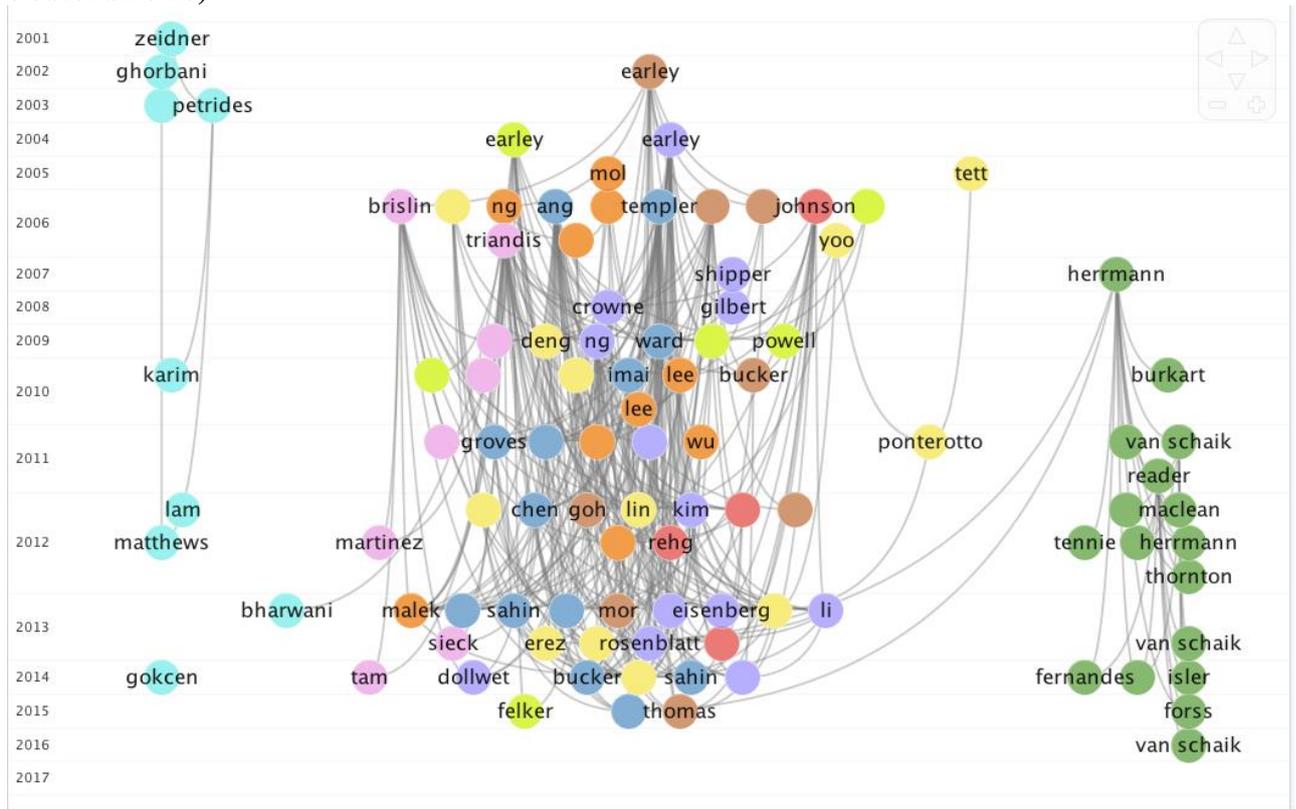
Figure 4. Detailed View of 5.00 Parameter Clustering
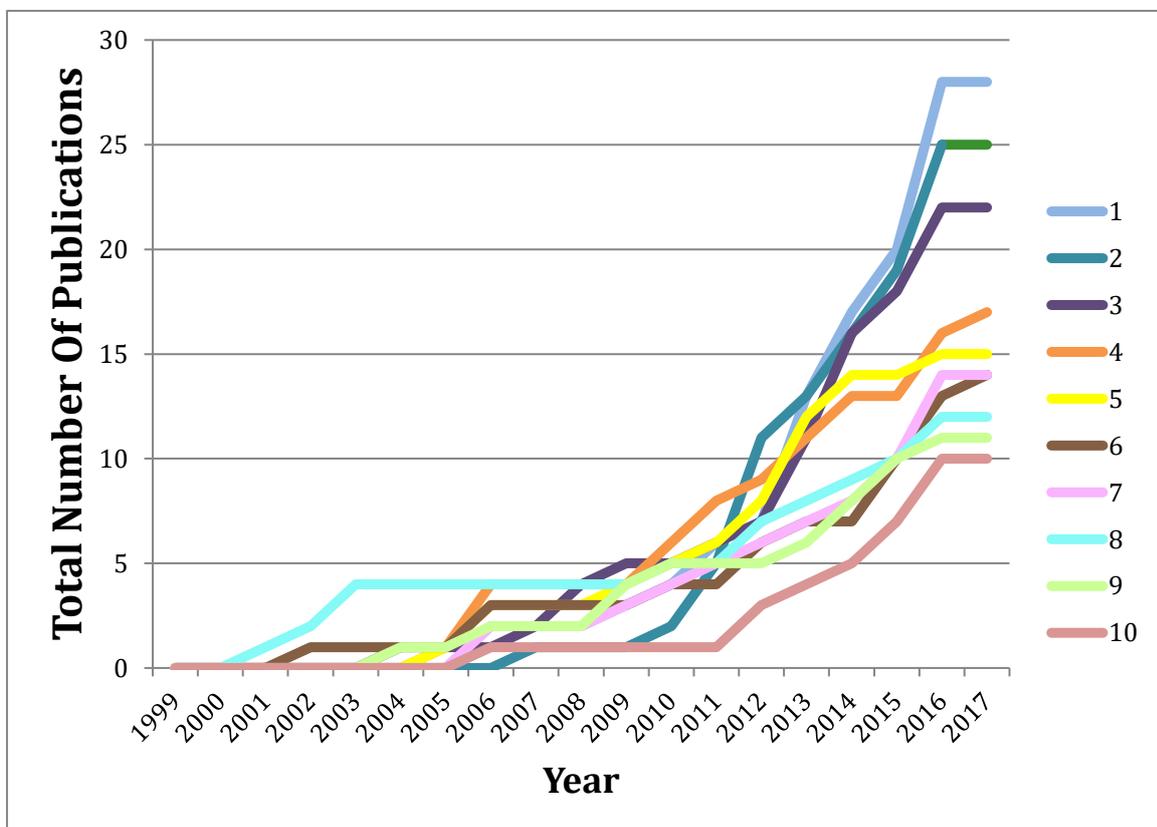
Appendix

A: Journal Publishers in quadrants B, C and D

Quadrant B: Low Focus, High Impact	**Quadrant C**: High Focus; High Impact		**Quadrant D**: High Focus, Low Impact	
Journal Of Social Issues	Group & Organization Management	American Psychologist	Journal Of Organizational Behavior	
Educational And Psychological Measurement	Academy Of Management Learning & Education	African Journal Of Business Management	Applied Cognitive Psychology	
Decision Knowledges	International Journal Of Intercultural Relations	Intelligence	Asia Pacific Education Review	
Knowledge	Organizational Behavior And Human Decision Processes	Cross Cultural & Strategic Management	Australian Psychologist	
Business Horizons	International Journal Of Human Resource Management	European Journal Of Personality	Educational Studies	
Research In Organizational Behavior, Vol 24	Journal Of World Business	Human Resource Management	European Journal Of International Management	
Human Resource Development Quarterly	Journal Of Cross-Cultural Psychology	European Management Journal	Human Resource Management Review	
Annual Review Of Organizational Psychology And Organizational Behavior, Vol 1	Cross Cultural Management-An International Journal	Asia Pacific Journal Of Education	Journal For East European Management Studies	
	Journal Of International Business Studies	International Business Review	Journal Of Applied Developmental Psychology	
	Journal Of Managerial Psychology	Annual Review Of Psychology	Journal Of Management Development	
	Philosophical Transactions Of The Royal Society B-Biological Knowledges	Journal Of Social Psychology	Journal Of Psychology In Africa	
	Harvard Business Review	Culture & Psychology	Learning And Individual Differences	
	Journal Of Applied Psychology	Personnel Review	Learning And Instruction	
	Personality And Individual Differences	Clinical Neuropsychologist	Management International Review	
	International Journal Of Selection And Assessment	Journal Of International Management	Management Research Review	
	Applied Psychology-An International Review-Psychologie Appliquee-Revue Internationale	European Journal Of Psychological Assessment	Organizational Dynamics	
	Human Resource Development Review	Human Development	Personnel Psychology	
	Animal Cognition	International Journal Of Psychology	School Psychology International	
	American Journal Of Primatology	Hispanic Journal Of Behavioral Knowledges		

B: Journal related abbreviations

Abbreviation	Explanation
AC	Animal Cognition
AMLE	Academy Of Management Learning & Education
AN	Applied Neuropsychology
AP	Applied Psychology-An International Review-Psychologie Appliquee-Revue Internationale
AP	American Psychologist
AROPOB	Annual Review Of Organizational Psychology And Organizational Behavior, Vol 1
BH	Business Horizons
CCM	Cross Cultural Management-An International Journal
CCSM	Cross Cultural & Strategic Management
CN	Clinical Neuropsychologist
EJP	European Journal Of Personality
EJPA	European Journal Of Psychological Assessment
EMMJ	European Management Journal
EPM	Educational And Psychological Measurement
GOM	Group & Organization Management
HBR	Harvard Business Review
HRDR	Human Resource Development Review
I	Intelligence
IJHRM	International Journal Of Human Resource Management
IJIR	International Journal Of Intercultural Relations
IJP	International Journal Of Psychology
IJSA	International Journal Of Selection And Assessment
JAP	Journal Of Applied Psychology
JCCP	Journal Of Cross-Cultural Psychology
JIBS	Journal Of International Business Studies
JMP	Journal Of Managerial Psychology
JOIMG	Journal Of International Management
JOIMK	Journal Of International Marketing
JSI	Journal Of Social Issues
JWB	Journal Of World Business
OBHDP	Organizational Behavior And Human Decision Processes
PID	Personality And Individual Differences
PTRSBK	Philosophical Transactions Of The Royal Society B-Biological Knowledges
ROB	Research In Organizational Behavior, Vol 24
SJOM	Scandinavian Journal Of Management

Reflection Note
By Erik Lankut

Introduction

As requested by the School of Business and Law at the University of Agder, students handing in their master thesis must submit a reflection note discussing the broad themes of internationalisation, innovation and accountability, and relate the broad themes to the findings and results of the master thesis. First I start with a summary of the master thesis on Cultural Intelligence (CQ), followed by discussing the relationship of CQ to International Trends, Innovation and Responsibility as part of the reflection note.

Summary of Master Thesis

Our master thesis is a citation meta-analysis of the phenomena called "Cultural Intelligence" (CQ), by specifically analysing the research in and literature of CQ. CQ is the ability to effectively adapt and perform in cross-cultural context. Our goal with the thesis is to identify the ways of theory, research and practice of CQ for us to be fully competent of performing our own research in the international management field. Our thesis contributes to the international management field with one of the first attempts of performing a "DNA check" via citation meta-analysis. Specifically, the analysis can identify its antecedents and outcomes of CQ and provide a much clearer direction for future researchers, with units of analysis being published articles, its scholars and the related institution of research. Our thesis is also one of the first attempts of integrating and synthesising three different citation tools to achieve objective and scientific results as close as possible, as previous meta-analysis may have been too subjective. We ended up with 10 unique research clusters of antecedents to and outcomes of CQ which will impact future theory, research and practice

Cultural Intelligence (CQ) related to International Trends

The following reflection on CQ to international trends discuss how the operating environment of the articles, scholars and institution may be influenced by international forces, and how they would react to such forces.

Reflecting on the views of CQ publications of scholars within the operating environment, the spawn of such articles stems from the demand for increased CQ research to further elaborate the knowledge of improving the process of globalization. Such interest and demand comes naturally from Multinational corporations (MNCs), global institutions and organisations that have a foot in the global trade or encountering cross-cultural contexts frequently. Due to income and price differences leading to MNCs establishing operations abroad, there is a need of understanding how to perform work-assignments for expatriate's managers and workers better. If CQ deems to be an increasing important construct of intelligence to actors on national or supra-national levels, there is a possibility of eliminating the perceived challenges of increased globalisation and cross-cultural interactions: e.g risks of bad expatriate experiences and expatriate-related costs, improved negotiation power of culturally different actors, culture shock and cultural bias of individuals, expatriate exploitation. By further expanding the understanding of CQ through production of contributing articles and encouragement of further scholars, we can connect and simplify the integrated multinational environments to achieve a healthier globalisation. One international force that may influence such CQ research production in the operating environment is the increasing conflict of the "social revolution": the creation of social media and virtual platforms have enabled cross-cultural communication to occur in real time. The benefits from such technology can be both beneficial and harming; by instance providing any wrong or false information to a trading stock market can result into shares plummeting; Media speculating the existence of "Political Hackers" that may have adjusted the course of some major political elections as the United States Presidential election of 2016. As such, there has been an increased research into involving CQ in virtual team collaborations, using the social media, as a tool of performing better cross-culturally. Tools of CQ assessment can also be further designed to reflect this international force, by accounting for interactions across virtual platforms.

CQ related to Innovation

The following reflection on CQ to innovation addresses any gaps or needs in the market place or any sector that is not presently covered by existing services, products or practices when looking at the scholars in the field of CQ research.

Our master thesis is an attempt of innovating some parts of the CQ research, by performing a citation meta-analysis of all CQ contributions. This is possible due to CQ is a relatively new construct; Our study is the first analysis in its kind that performs a "DNA" check on its research for guidance by using objective clustering and analysis. It addresses the gap of subjectivity by performing and attaining an objective or scientific research as most previous meta-studies may have been subjective, where scholars performed the clustering themselves. As mentioned in the reflection to international trends, all MNCs or any globally interacted organization or body would have to consider the CQ level to become more effective and adaptive to cross-cultural interaction and differences. Hence, actors must consider the inclusion of CQ into their training programs, recruitment or assignments abroad. This is also relevant to Universities and institutions providing international management education that shapes future leaders and expatriates to future challenges. The cultural intelligence can replace the intelligence quotient as an important construct, where we would be able to educate and train anyone to attain a high level of CQ. From our results in the master thesis, there is a great need for examining the difference of CQ levels between international management students and professionals, to understand if the development of CQ grows better in an university or business setting. For potential work assignments abroad led by MNCs, selecting those candidates displaying high CQ would diminish the risk of turnover and dissatisfaction of expatriate assignments, while at the same time prepare those candidates that deems to display a low level of CQ.

CQ related to responsibility

The following reflection on CQ to responsibility discusses the potential ethic challenges that may arise for scholars in the CQ research field, the existence of competitive advantages or useful risk mitigation associated to possible management practices relevant to CQ or scholars of CQ, and the suggestion of continued improvement of the CQ construct to achieve better responsibility within the international management field.

Scholars of CQ may be challenged for the correct usage of original theory, claimed to be biased to a Western or Eastern theory. The construct has been developed by many scholars of thoughts, both western and eastern, which may arise for an ethical challenge of its true "origin". Should the CQ construct benefit the western more, or advocated to one part only? Does western CQ or eastern CQ exist? CQ could also be dictating and dominating recruitment processes of global actors if the concept of CQ turns into the new "IQ" status, ending up with an "elite" workforce of the best professionals in cross-cultural interactions. As such, a possible competitive advantage relates to management practices within actors: selecting those with high CQ as a criteria to become "global" leaders, senior managers or even CEO; those institutions that can deliver the best CQ-trained graduates could rebrand themselves as the CQ-leading institutions; those scholars who achieve a "perfect" CQ-measure could consider selling the instrument for profit, or make it open source for no profit. Useful risk mitigation with possible responsible management practices exists: Improving work- or study assignments abroad can in turn reduce turnover rate or achieve higher development of CQ, which in turns creates a more effective institution or ventures, turning into profits for share- and stockholders. Improving the CQ construct further can create better responsibility within the international management field, with the idea that understanding how we can measure and transfer levels of CQ to anyone enables us to create "superficial" intelligence. To improve the construct further, one can research "every" factors that may relate to the cultural intelligence, for instance if spirituality or religious intelligence may also in turn correlate and predict greater cross-cultural adaptability.

Reflection Note
By Nooria Yari

Summary of master thesis

Our master thesis is a citation meta-analysis of Cultural Intelligence (CQ) literature. The purpose of this research was to identify the path of theory, research and practice within the concept of Cultural Intelligence, by synthesizing three citation tools; HistCite, CiteNetExplorer and VOSviewer. Our thesis is one of the first attempts of integrating and synthesizing three different citation tools to achieve objective and scientific results as close as possible, as previous meta-analysis in this field may have been too subjective.

CQ is defined as the ability to effectively adapt and perform in cross-cultural context. Our thesis contributes to the international management field with one of the first attempts of performing a "DNA check" via citation meta-analysis. Our results demonstrates that Cultural Intelligence is not only important in business and management field, but also in various other fields such as phycology, human evolution, biology and many more.

Cultural Intelligence (CQ) related to International Trends

We live in a globalized world, where different cultures live together closer than ever. There are around 7 billion people, speaking over 6000 languages and thousands of different cultures that are connected to each other through work, education, travel or even surfing on the Internet. How we function effectively during interactions with someone different is an interesting era of research, especially in education and business context. Having established this fact, it becomes necessary to understand the importance of different processes such as trust, communication, common cultures, language barriers, ways we refer to each other, meeting times and places, broad ideas of productive work and effectiveness, status and rewards etc. and thus provide knowledge on how to overcome cultural barriers that may occur within these contexts.

Cultural differences play a very important role in achieving success in a business relationship. Previous researches have showed that culture may impact positively, by

facilitating communication between employees and business partners (Gould & Grein, 2009). It is the shared assumptions, values, and web of significance or meaning that is used to make sense of an environment. Multinational and cross-cultural teams are becoming more and more common, which gives businesses an opportunity to gain benefit from an increasingly diverse knowledge base, cost efficiency and market growth, and accordingly an insightful approach to business problems. In other words, International businesses has now the opportunity to gain benefits such as skills and expertise from different parts of the world at a lower cost, however along side with these benefits, global firms and multinational companies also face potential obstacles when it comes to culture and cultural differences.

The importance of understanding cultural diversity in successful multinational enterprises and international companies is reflected from their organizational strategies and cultural adaptation of the target industries. Similarly, an international company or institution with weak understanding of the target markets local culture can perform poorly.

Hence, the spawn of research within cultural contexts stems from the demand for increased CQ research to further elaborate the knowledge of improving the process of globalization, as CQ refers to an individual's capability to function and manage effectively in culturally diverse settings (Early & Ang, 2003). Our thesis aims to map the previous research within the context of CQ that can construct a further research on the gap that exist in literature, and thus provide methods and modules to overcome cultural barriers effectively.

CQ related to Innovation

Our mind is the most powerful asset of innovation, by constantly thinking about innovation we essentially help our mind foster creative ideas and innovative solutions. Since diversity has moved from being something which is nice to have to something a company "must" have, and benefits from innovation constantly praises to sell people on diversity, one must take the opportunity to see things more broadly. Unfortunately diversity does not always function as our best interest.

In culturally diverse teams, maintaining and developing a climate of culturally intelligent members requires a deliberate, ongoing effort. Therefore, most of the multinational companies and organization can easily get distracted. Therefore, a team with high CQ would pay attention to the differences rather than tolerating or overlooking them, by identifying each team member's differences and bringing together the most relevant differences. These

differences can relate to personality styles, skills or industries previously worked. Studies show that a diverse team with relevant differences perform better and come with more creative ideas. One of the tools that can be to help identify these differences is the CQ assessment report such as Business Culture Intelligence Quotient (Alon et al. 2016).

Having established that cultural diversity is essential to innovation, it is important to see that diversity alone cannot lead to better solution, especially in business contexts. Hence, Cultural Intelligence is the differentiating factor. As CQ is a research based way of measuring and thus improving capabilities and effectiveness for working across cultures, CQ can work as a multiplying factor when its combined with diversity. In other words, a culturally divers team with lower CQ perform significantly worse than homogeneous teams, but Team members with High CQ can essentially outperform homogeneous teams in every area such as productivity, employee engagement, cost savings, profitability, and thus come with much more innovative outcomes.

CQ related to responsibility

The characterization of social culture and organizational behaviour can be complex topics. Since it is cultural practices that inform us about our perception of values and responsibilities towards society. Studies show that global organizational interventions for enhancing effective global leaderships spans from instructive cultural programs. These programs essentially take the form of cross-cultural training or diversity training whether it is in-house training or conducted to an outside consulting firms or academic institutions.

At the present time the concept of CQ is gaining more and more importance, and assessment tools for measuring CQ are being tested and validated. These assessment tools can identify an individual's capability to function effectively in a cross-cultural context. Hence, one can foresee that CQ if not now, but soon will change the focus of MNEs, institutions and businesses from previously preferred high IQ level to now preferred high CQ level of employees or students who apply for any new position. This can cause biases in work environment such as comparison of human ability, as some people might or might not have the opportunity to increase their CQ. Therefor it is extremely important for businesses not to fall into these biases.

Suggestions

During my five years of study, I often faced situations where culture played a significant role, especially in courses that had group work as a requirement. It took me awhile to understand that I perform better when working with an international group, hence my international background. In the contrary, my performance would drop when working with a nationally homogeneous group. The reason behind this was perhaps the likelihood of thinking quite the opposite of what my other group partners were thinking, and being the minority of the group ended up with me compromising with the rest. This is indeed a problem that can happen to many other international students, which can have negative impact on student's group performance.

Another aspect of culture that is very difficult to overcome is students' interaction during lecture hours. Often, students do not feel comfortable enough to participate in lectures, which some of the international lecturers and students find very difficult. This can eventually cause that international students, who are willing to participate in class discussion in their own countries, adapt the same personality as the Norwegian students, and eventually participate less. This is a bias of culture dimension that occur in many other situations too. In Norway, everyone is supposed to respect the personal space of one another, and thus people do not intend to offend another person by commenting something, which they consider as "wrong" or inappropriate.

An innovative approach to overcome this bias is to develop a model that helps student increase their CQ, and implement-learning models that include all students, and make them participate in discussions in lectures. Cross-cultural subjects, CQ measurement assessments, and other similar approaches could have positive effect on the learning outcome and thus a positive effect on a positive globalization.