

# Cultural differences in emotional intelligence among top officers on board merchant ships

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## ABSTRACT

The current research investigated cultural differences in emotional intelligence among top officers on board vessels of multicultural maritime companies. We found that Southeast Asian officers scored higher than European officers on the total Emotional Intelligence scale. When separating the EQ scale in its facets, higher scores for Asian officers were found on “Utilization of emotions”, “Handling relationships”, and on “Self-control”. Another finding was that Chief officers/Second engineers scored higher than Masters/Chief Officers on “Self-control”. Finally, we found a negative correlation between age and scores on the facet of “Self-control”. These cross-cultural differences may have implications for interpersonal relations and ship management.

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Key words: emotional intelligence, maritime officers, cultural differences

The maritime industry is a multicultural business. Manning vessels is time consuming and expensive, and most often vessels are manned by mixed cultural crews. One of the most significant and sensitive responsibilities for top officers onboard vessels in the maritime sector is personnel handling. Creating a “happy ship” involves interpersonal skills of the officers in charge, and it could be argued that a multicultural crew adds to the challenge. It has also been argued that a generation gap has occurred with a change of focus in the leadership education from an autocratic leadership style towards a more democratic leadership style. Adequate personnel handling improves the performance, selection and retaining of skilled workers onboard. In order to deal with the complexity of personnel matters, a leader’s empathic abilities are challenged. Empathy is considered the core element of Emotional Intelligence (EQ). The intention of the present study was to investigate possible cultural differences in EQ as well

as to explore the relation between rank and age and EQ in personnel serving as senior officers onboard vessels of major international shipping companies.

The construct of EQ was first introduced by Salovey and Mayer [1], who defined it as “a set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, and the use of feelings to motivate, plan, and achieve in one’s life”. According to Ziedner, Matthews, Roberts, and MacCann [2], EQ can be classified into two basic types. Firstly, EQ is explored as a mental ability [3] and secondly, it can be viewed as a “mixed model” [4]. In the first approach, EQ is described as four interrelated skills involved when one processes emotional information. The first ability is the perception and identification of emotion in self and others. Secondly, there is the utilization of emotion to facilitate cognition and performance. A third component is the understanding of the antecedents and consequences of emotion. The reflective regulation of emotion in

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self and others is the last dimension of EQ. The concept can be viewed as a form of intelligence and is called the Four-branch model [5].

Goleman [4] later developed a mixed model approach by stating that EQ consists of both cognitive abilities and aspects of personality and motivation. This combination of cognitive competences and components of personality facilitates the application of skills for handling emotion in real-world settings. As a result, the original definition of EQ was later revised and is now described as “the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth” [3]. EQ has been reported to have an impact on social as well as communicative functions [6]. Although several definitions have been used in the literature, a review of Ciarrochi, Chan, and Caputi, [7] concluded that the various definitions of EQ tend to be complementary rather than contradictory.

In the present study, the aim was to investigate the cultural differences in EQ by exploring differences among maritime officers from Northern Europe, Western Europe, Eastern Europe, and Asia. It is generally accepted that emotions are shaped and maintained by culture [8], and Law, Wong, and Song [9] consider the concept of EQ as a general human ability. However, the behaviour resulting from the ability could vary across cultures, and according to Planalp & Fitness [10] there are differences across cultures concerning how much emotions are talked about and to what extent they are recognized daily.

In a study of the cultural influences on the relation between EQ and depression, Fernández-Berrocal, Salovey, and Vera [11] reported higher EQ scores in a US sample compared to Chilean subjects. However, differences in sampling procedures in the two nations made the authors cautious in interpreting the results. In a study of cross-cultural differences in the relationship between Emotional intelligence and Academic leadership practice, using the Nelson and Low’s Emotional Skills Assessment Process, higher levels of relationship (dimension of Assertion) and task-oriented emotional skills were found in US compared to Taiwanese academic leaders. Taiwanese leaders scored higher on the relation-oriented dimensions of Comfort and Commitment Ethic [12]. A cross-cultural study of student samples [13] reported higher scores of Emotional Intelligence in a French compared to a Pakistani student sample. This was evident for the total score as well as several dimensions.

Hofstede [14] argues for three basic cultural differences labelled distance, uncertainty avoidance, and individualism. Individualism ranges on a continuum from collectivism to individualism. Collectivism is described as “a set of meanings and practices that emphasize the relatedness of a person to his or her in-group and, more generally, to the world. Similarly, individualism is a set of meanings and practices that underline the individual as bounded, unique, and independent” [15]. The notion of cultural differences in emotional experience has gained support. Mesquita [15] argued that emotional experience between individualist and collectivist culture are basically different. The structure of individualist cultures is considered to be similar in western countries like America and Europe, and the collectivist structure of Asian countries such as Japan, China, and Korea are considered to be equally similar.

Hofstede’s [14] typology is widely accepted [16], and several cross-cultural projects carried out after Hofstede’s [14] study have supported the validity of these cultural dimensions [17]. The typology has also gained support in studies of the linkage between emotional intelligence and managerial effectiveness (e.g. [15]).

However, research has also identified universal aspects of the processing of emotional stimuli. Ekman and Friesen [18] identified universal emotions and emotional expressions. The facial emotional expressions of fear, anger, sadness, happiness, disgust, and surprise have been extensively studied and identified in different cultures. Thus, on the one hand, there are convincing arguments for demonstrating that emotional interpretations are to a large part universal and can help people to understand their own and others behaviours. On the other hand, there is support for cultural-specific differences in shaping and maintaining emotions [5]. Taken together, there is an open question of cultural differences in EQ, and especially on board maritime vessels. Since crews live together in restricted space over long time periods, empathic abilities are needed in order to reduce conflict. It is an open question if cultural differences among top officers on board exist, since becoming a top officer requires success in lower ranks, and self-selection could play a role in overriding possible cultural differences.

Based on Hofstede’s [14] conclusion that collectivist cultures encourage interdependent self while individualist cultures promote an independent self, we propose the hypothesis that people in more collectivist cultures (i.e. Asia) will score higher on an emotional intelligence scale than those in more individualist cultures (i.e. Northern Europe, Western Europe, Eastern

Europe). Furthermore, the relationship between age as well as rank and EQ will be explored since emotional intelligence could be a significant element in being promoted and age may represent a life experience factor that might be reflected in higher levels of EQ.

## MATERIAL AND METHOD

### SUBJECTS

A total of 366 males, employed in eight maritime companies as top officers, constituted the sample in the present study (mean age = 45.06 years, SD = 8.6 years). The sample consisted of masters/ chief engineers (n = 227) and first officers/second engineers (n = 139). All participants took part in a leadership program in their respective companies.

### MEASURES

The measure of EQ used in the present study was the Emotional Intelligence Inventory [19]. The inventory was developed in accordance with the model of emotional intelligence given by Salovey and Mayer [1]. The questionnaire consisted of 41 items (scored 1–4; Never like me – Always like me), and Tapia [19] identified four factors describing EQ, “Empathy”, (e.g. “I sympathize with other people when they have problems”), “Utilization Thought”, (“I am able to stay motivated when things do not go well”), “Handling relationships” (“I think about how I can improve my relationship with those people with whom I don’t get along”) and “Self-control” (“Having car trouble causes me to feel stressed”).

In the present study, no reliability coefficient of the questionnaire and the subscales could be calculated. However, this questionnaire is based on the previous work of Tapia [19], which presented adequate reliability for both the total score and the four subscales. The estimate of internal consistency of the scores, using the Cronbach coefficient  $\alpha$  for the 41 items, was 0.81. The scores derived from the items of the first factor (“Empathy”) had a Cronbach  $\alpha$  of 0.74. Scores of items from, respectively, factor 2 (“Utilization of emotions”), 3 (“Handling relationships”), and 4 (“Self-control”) produced Cronbach  $\alpha$  of 0.70, 0.75, and 0.67, respectively [19]. In a previous study of Norwegian students, Hystad, Eid, Tapia, Hansen, and Mathews [20] obtained alpha coefficients of 0.77 on the total score. The reliability coefficient on the dimensions ranged from 0.63 (Factor 4) to 0.69 (Factor 1).

Additional information of rank, age, and nationality were collected. Finally, to ensure anonymity, no names or companies were included.

### PROCEDURE

Maritime officers were asked to complete the EQ questionnaire while participating in a leadership training course. The officers were categorized either as masters and chief engineers or first officers and second engineers. In order to investigate cultural differences, four clusters were made (Northern Europe, Western Europe, Eastern Europe, and Asia). These clusters were based on a previous study that focused on culture and leadership in 62 nations [21]. In the present study, the sample of Northern Europe (n = 23) included participants from Norway, Sweden, Denmark, and Finland. The Western Europe sample (n = 32) consisted of maritime officers from the United Kingdom, the Netherlands, Belgium, France, Germany, and Spain. Seven countries were related to the Eastern Europe sample (n = 162): Latvia, Czech Republic, Ukraine, Lithuania, Poland, Romania, Russia, and Croatia. The last sample was the Asian sample (n = 149), which included top officers from, China, Philippines and India.

### STATISTICAL ANALYSES AND DESIGN

One-way ANOVA was performed on the total score of EQ. Nationality cluster was treated as a between-group factor. To follow up on this, four separate one-way ANOVAs were performed for each of the dimensions of the EQ scale. Fisher LSD was used as post-hoc test.

When exploring the relation between rank and EQ five separate t-tests were conducted testing total score and the dimensions of the EQ scale. In addition, statistical differences are presented using Cohens  $d$ . In order to investigate a possible covariation of age and scores on the EQ questionnaire, Pearson product-moment correlation was used.

## RESULTS

### CULTURAL DIFFERENCES IN EQ SCORES

Table 1 presents the descriptive statistics for the four clusters. A one-way ANOVA was performed in order to test differences of the four clusters of nationalities. A significant main effect was found;  $F(3,362) = 4.24$ ,  $p = 0.006$ . The result of the post-hoc tests revealed the Asian group scoring higher on the total EQ scale compared to both the Western European cluster ( $p < 0.05$ ; Cohens  $d = 0.38$ ) and the Eastern European cluster ( $p < 0.001$ ; Cohens  $d = 0.37$ ).

When looking at the dimension of Empathy a one-way ANOVA revealed no differences,  $F(3,362) = 0.48$ , n.s. A one-way ANOVA using Utilization of emotions as dependent variable showed a main effect of

**Table 1.** Shows descriptive statistics for the four clusters separated for total EQ scale and its dimensions

	Asian Cluster		Western Cluster		Eastern Cluster		Northern Cluster	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total EQ-score	152.71	15.23	147.66	11.18	147.59	12.37	147.65	11.42
Empathy	40.96	6.45	41.81	4.63	40.78	5.32	41.87	4.64
Utilisation of emot.	42.71	4.99	41.09	4.19	40.85	4.33	39.61	2.79
Handling relations	33.94	5.51	33.13	5.12	32.87	3.93	31.52	3.90
Self-control	35.10	4.70	33.13	5.12	33.09	4.16	34.65	3.79

nationality cluster [ $F(3,362) = 6.09, p < 0.000$ ]. LSD post-hoc test revealed a higher score for the Asian cluster compared to the Northern European ( $p < 0.002$ ; Cohens  $d = 0.77$ ) and the Eastern European clusters ( $p < 0.0003$ ; Cohens  $d = 0.40$ ). The Asian cluster also scored marginally higher than the Western European cluster ( $p < 0.06$ ; Cohens  $d = 0.35$ ). The main effect of the clusters was found for the Handling relationship,  $F(3,362) = 3.76, p < 0.01$ . Asian top officers scored higher than all other clusters (all  $p$ 's  $< 0.04$ ; Cohens  $d$ : Western European = 0.15; Eastern European = 0.22; Northern European = 0.50). Using Self-control as a dependent variable the main effect of the clusters emerged [ $F(3,362) = 5.85, p < 0.0006$ ]. Follow up LSD test showed higher scores for the Asian cluster compared to the Western European top officers ( $p < 0.02$ ; Cohens  $d = 0.40$ ), as well as the Eastern European officers ( $p < 0.000$ ; Cohens  $d = 0.45$ ).

### RANK AND EQ SCORES

Five  $t$ -tests were performed in order to test the differences in EQ scores (total score and dimensions) between Masters/Chief engineers and Chief officers/Second engineers. Only the analyses of Self-control reached the level of significance,  $t(364) = 2.33, p < 0.02$ , Cohens  $d = 0.25$  (see Table 2 for descriptive statistics) with Chief officers/Second engineers scoring higher than Masters/Chief engineers.

### AGE AND EQ

An age difference was found between Masters/Chief engineers and Chief officers/Second engineers, with Chief officers/Second engineers (mean = 40.6) being younger than Masters/Chief engineers (Mean = 47.8),  $t(364) = 8.46, p < 0.000$ . A negative correlation was found between age and the total score of the EQ questionnaire,  $r(366) = -0.11, p < 0.04$ . Furthermore, a negative correlation was also found on the dimension of Self-control,  $r(366) = -0.17, p < 0.01$ .

**Table 2.** Shows descriptive statistics for the two groups (masters/chief engineers and chief officer/second engineer) separated for total EQ scale and its dimensions

	Master/ /Chief engineer		Chief officer/ /second engineer	
	Mean	SD	Mean	SD
Total EQ-score	148.96	13.03	150.87	14.57
Empathy	41.02	5.95	41.00	5.95
Utilization of emotion	41.30	4.55	41.95	4.74
Handling relationships	33.05	4.64	33.21	4.73
Self-control	33.58	4.56	34.71	4.44

## DISCUSSION

The Asian cluster scored higher than both Western and Eastern European clusters. When separating the EQ scale in different dimensions the Asian cluster scored higher than all other clusters on Utilization of emotions and Handling relationship. The Asian clusters also scored higher than East and West European clusters on Self-control. Chief officers/Second engineers scored higher than Masters/Chief engineers only on the dimension of Self-control. A negative correlation was found in the relation between age and total score of the EQ-scale as well as in the dimension of Self-control.

Our hypothesis regarding the Asian cluster scoring higher than other clusters on EQ and its dimensions was confirmed. This indicates that Asian top officers showed an increased ability "to carry out sophisticated information processing about emotions and emotion-relevant stimuli and to use this information as a guide to thinking and behaviour" [5] compared to the other clusters studied. The analyses of the separate dimensions of the EQ scale revealed higher scores in the Asian samples on the three facets of Utilization of emotions, Handling relationship, and Self-control. According to Savoy and Mayer [1], Utilization

of emotions would include the ability to generate emotions, as well as using emotional knowledge in communication and decision-making. Handling relationship includes abilities like comprehension of emotional information as well as how they combine and develop through relational transitions. Self-control includes the ability to regulate one's own and others' emotions. These three dimensions can generally be viewed as indications of how people utilize the emotional information they have already perceived.

Although Asians scored higher than the other clusters of nationalities, exceptions were found. The Northern European cluster did not differ from the Asian cluster on the total score on EQ scale nor on the dimension of Self-control. This is noteworthy in comparison with a recent study of US and Norwegian students using the same instrument, in which Hystad et al. [20] reported no differences in total EQ scores, but higher scores on Self-control in U.S compared to Norwegian students. Although the samples (i.e. students vs. sailors) are different it may indicate that the Self-control facet of EQ – that is holding back emotions and restraining from impulsive emotional expressions – may be more typical for the Northern European and Asian clusters, compared to the North American cluster. However, looking at the mean scores on Self-control for the Northern European cluster (mean = 34.01; see table 1), it was higher than the Norwegian student sample (mean 30.17; 20). This could indicate that the EQ facet of Self-control represents an even more valued emotional factor in the Northern European sailors compared to the student sample. No differences were found on the dimension of Empathy between the clusters, which reflects the person's capacity to perceive both verbal and non-verbal emotional expressions. This finding could indicate that the dimension is not culture dependent, or that the two cultures do not differ on this part of EQ.

The cross-cultural differences found in the present study could reflect differences in values between collectivist and individualist cultures [15]. It is possible that the personal values of a member of a collectivist culture will be reflected in a higher score on EQ-measures. This is in line with Bond et al. [17], who focused on culture-level dimensions of social axioms, and two factors of beliefs were identified, respectively called Dynamic externality and societal cynicism. Dynamic externality correlates negatively with Individualism and is more present in collectivistic cultures. In these cultures people have the tendency to be attentive and emotionally responsive to the social environment. They have a higher hedonic

balance, more positive affect, longer duration of emotional experiences, and a stronger endorsement of the humane view of leadership. When looking at our Asian cluster, nationalities included in this cluster have been reported to show individuals with higher levels of Dynamic externality compared to individuals from European countries [17].

When looking at differences in EQ between Masters/chief engineers and Chief officers/Second engineers a less clear picture emerged. Chief officers/Second engineers scored higher than Masters/Chief engineers only on the dimension of Self-control. Hence, Chief Officers/Second engineers seem to be more open towards feelings and to regulate feelings in the self as well as in others. By doing so, it can help to increase personal understanding and growth. A link could be made between managing emotions and managing people. Today human aspects seem to be taken more into consideration within leadership practice and research. Indeed, Gooty, Connelly, Griffith, and Gupta [22] reported that in the last two decades the importance of emotions and effects in organizational behaviour has been growing. They argued that emotions and leadership behaviours are intensely intertwined. Another fact pointed by Gooty et al. [22] was that transformational leaders are emotionally competent in transmitting energy to their subordinates and in communicating accurately with them. In addition, these kinds of leaders can successfully regulate emotions and express positive emotion and empathy. One aspect of the transformational leadership is the capacity of the leader to express individualized consideration to subordinates, which again relies heavily on the empathic ability of the leader [23].

One way to further explore the difference between ranks in EQ is to look at age. Chief officers were significantly younger than Masters and age was negatively correlated with scores on the Total EQ scale as well as the dimension of Self-control. This could reflect a generation gap in leadership training in the maritime academies, with a change from a stricter authoritarian style to a more situation-based leadership style. However, the correlation coefficient was relatively weak and needs further investigation.

The effect sizes found in the present study were moderate to large (with the exception of Asian vs. West and East European clusters on handling relationships). This could have implications for critical managerial behaviour onboard. Several studies have argued for an association between EQ and transformational leadership as well as leadership practise [12]. A positive relationship between EQ and mana-

gerial effectiveness has also been reported [24]. The latter relationship was supported for interactive skills in US and UK samples, and for controlling skills in Malaysian and UK samples. George [25] suggested that EQ contributes to effective leadership by focusing on five essential elements of leader effectiveness. These elements were: development of collective goals and objectives, instilling in others an appreciation of the importance of work activities, and generating and maintaining enthusiasm, confidence, optimism, cooperation, and trust. The elements contribute in encouraging flexibility in decision-making and change, and in establishing and maintaining a meaningful identity for an organization.

To sum up, Asian top officers on board sailing vessels score higher EQs compared to other the nationality clusters investigated. However, these differences were found on dimensions tapping for the utilization of emotional information already perceived. No difference in empathic ability including the ability to detect one's own and others' emotions was found. To our knowledge, this study represents one of the few attempts to compare cross-cultural differences in EQ in the maritime industry by using standardized questionnaires. More research is clearly needed, but a better understanding of emotional aspects of cross-cultural communication is important to ensure worker motivation and effective use of human resources onboard.

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