# An Investigation of Organizational Culture and Job Satisfaction on board Industrial and Cruise Ships

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Master thesis in social- and community psychology

Spring 2011

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## Preface

The main goals of this thesis are to investigate organizational culture, job satisfaction and occupational stress as parts of the work environment on board industrial and cruise ships. The results are based on a self-developed questionnaire survey carried out in 2010.

In terms of structure, the thesis contains an introductory article and two empirical research articles. The introductory article presents the general theoretical background for the current study, as well as an overall presentation and discussion of the two separate research articles. Due to structure, some reiterations may occur throughout the text.

The present thesis was a collaboration with Det Norske Veritas (DNV), and the self-developed questionnaire will be used by DNV as a tool for helping shipping companies to improve their on board work environment.

Several people need to be thanked for their help and support throughout the process:

- The two shipping companies and the respondents for participating in this study

- DNV for the support and the idea for this thesis

- Kyrre Svarva for helping out with the questionnaire

- Øyvind for being a great collaborator

- Torbjørn Rundmo for being a dedicated supervisor

- My dear mother and Anders for being supportive and helpful

Marta Lang

March 2011

# CONTENT

# Introduction Article:

Variables Contributing to Differences in Organizational Culture and Predictors of Job Satisfaction on board Ships

**Abstract**

The overall aim of the study was to examine work environment factors within the maritime industry. For this purpose a new measurement tool for work environment on board ships was developed. Further aims of the study were the examination of organizational culture, occupational stress and job satisfaction. 215 seafarers from 24 ships participated in the study. The response rate was at 35% for the whole sample. In order to investigate differences in organizational culture, a multivariate analysis was conducted, which revealed significant differences in organizational culture due to nationality and hierarchical position. In order to examine predictors of job satisfaction, multiple hierarchical block regression analysis were performed. Occupational stress and organizational culture emerged as significant predictors of job satisfaction. Especially relationships with co-workers and relationships with superiors emerged as predictive for job satisfaction. Social support and feedback from superiors showed the strongest predictive power for job satisfaction. The results in the study emphasize the importance of nationality and hierarchical position as important variables for measuring organizational culture. In addition, the importance of social relationships between co-workers and superiors are discussed.

**Introduction**

When doing research within occupations linked to the shipping industry, psychosocial work environment plays a key role. In addition to the physical environment, psychological and social factors are important when looking into organizational factors such as culture and job satisfaction. A deeper understanding of the work environment on board a ship is of crucial importance when investigating accidents, safety attitudes and other challenges the shipping industry has to deal with. Every specific workplace is unique and contains different factors that shape the whole work environment. The ship as part of the larger shipping organization is a moving workplace. This alone is something that makes this type of occupation unique. In addition there reigns a great variety of different nationalities when it comes to the seafarers working on the ships. A study at the Seafarers International Research Centre illustrated that approximately only one third of ships have a single nationality crew (Kahveci & Sampson, 2001, in Hetherington, Flin, & Mearns, 2006). As every nationality has its own cultural manifestations, it can be of interest to investigate possible effects nationality may have on different organizational factors.

The overall purpose of this study is to examine organizational factors which shape the work environment on board ships. There is being granted a closer look into factors such as *organizational culture*, *job satisfaction and occupational stress* connected to variables that are specific applicable for the area of the seafarer. Variables such *as nationality*, *hierarchical position*, different ship types and *social relationships* are of relevance when studying organizational factors on board ships.

*Overview of the study*

This thesis contains an introductory article and two empirical research articles. The introductory article presents the general theoretical background for the current study, as well as an overall presentation and discussion of the two separate research articles.

The first article aims at examining whether nationality, hierarchical position and ship type contribute to differences in organizational culture. The second article aims at uncovering important predictors of job satisfaction for seafarers working on board ships. The present introductory article contains some re-iterations as it sums up the two research articles.

# Theoretical background

## *Working conditions on board a ship*

There are certain unique characteristics of the seafarer's occupation that have to be considered when studying the psychological work environment on board ships. The occupations of seafarers and the crews on ships as a whole differ a lot from land based workplaces (Kristiansen, 2005). First of all the physical conditions are important to be considered. The ship is a moving working place where in addition thermal climate has huge impact on the working conditions. Factors such as temperature, humidity, air speed and heat radiation are functions of the thermal climate. There is also a lot of noise, vibration and illumination which constitutes the unique work environment for people working on ships. Another big difference between a land based workplace and the ship is that its total crew functions as a "24 hour community" (Kristiansen, 2005). Seafarers spend both work and leisure time in each other's company, and the type of relationships that develop in the crew is not the same as for employees on land based occupations. This kind of closeness is a core trait of the occupation of the seafarer. A land job on the other hand means that the individual has a daily shift between the professional and private sphere (Parker, Hubinger, Green, Sargent, & Boyd, 1997).

Since seafarers work in shifts, the results are tough working hours and often time pressure connected to travelling time, and operations as unloading and loading of the cargo. There are many psychological stressors as result of the tough working hours. Fatigue, inadequate rest between watches and sleep loss by being woken unexpectedly often are seen as such stressors. A reduction in crewing is another factor that contributes to fatigue (Bloor, Thomas, & Lane, 2000). Reductions often occur on cost grounds, and result in duties being added to the existing burdens of the officers. Reductions in crewing levels are thus associated with broken sleep patterns and long working hours – a survey for the union organization, the International Transport Workers Federation, noted that 14% of seafarers responding worked 12 hours a day or more (MORI, 1996, in Bloor, et al., 2000).

Another important stress factor for all crew groups is separation from home (Kristiansen, 2005). Missing the family and lack of contact during periods of illness at home are both typical situations which are also known from studies within the offshore industry (Kristiansen,

2005). Factors such as worry about family, lack of support from home and absence of stability in home life are mentioned as contributors to stress.

All the stated traits specifically apply for seafarers working on different type of ships. The unique functioning of crews has to be considered when studying factors that shape the psychological and the physical work environment on board ships.

*The ship as a multinational workplace*

Another important characteristic for the ship as an organization is *multinational crewing*. Spurred by an economic crisis caused by too many ships chasing a diminishing volume of cargo, ship owners have sought to cut operating costs. One way to do so was to recruit seafarers from countries where salaries were relatively low (Håvold, 2007). Cheaper crews come from the developing world, most notably from the People's Republic of China, from India and from the Philippines. Filipinos constituted 20% of the world's seafarers in the year 2000 (Bloor, et al., 2000). The countries with the greatest number of crew aboard vessels registered in Norwegian ships registered as of 31st December 1999 were the Philippines (8313), India (1838) and Russia (1202). A 1999 census showed a total of 34,388 seafarers on Norwegian registered vessels, with nearly 50% of the sailors from countries other than Norway (Statistics Norway, 2000 in Håvold, 2007). A study at the Seafarers International Research Centre illustrated that approximately only one third of ships have a single nationality crew (Kahveci & Sampson, 2001 in Hetherington, et al., 2006). This implies that the crew of the vessels may differ strongly as regards their cultural backgrounds (Håvold, 2007). A multinational crew can potentially create language issues, therefore flag states require that each ship must have a working language that each employee must speak to a certain standard, deemed competent. Several research studies have revealed the problems that exist on board among culturally diverse crew (Sampson & Zhao, 2003). Despites concerns within the shipping industry relating to perceived cultural and linguistic barriers amongst mixed nationality crews, data produced by Sampson and Zhao (2003) suggested that many seafarers have a decided preference for working within multinational crews. Filipino seafarers often described preferring to avoid working with "full Filipino crew" because they had heard about, or experienced nepotism in such situations. Other seafarers suggested that working with your own countrymen was more risky than working with other nationalities in terms of the potential for conflict. They suggested that there was a social distance, a tolerance, and a

respect, which people afforded other of different nationality that made it easier to retain professional and non-conflict relationships aboard. Despite the positive feelings expressed by seafarers in relation to working with multicultural crews, communication was acknowledged by most as a problem of potentially great proportion. Poor communications or miscommunications could lead to a vast array of problems, of both social and a work-related nature (Sampson & Zhao, 2003).

*National culture* is considered a contextual influence and Hofstede's five dimensions have been used to measure the differences in national cultures. The Value- Belief Theory (VBT), which is favored in most cross-cultural research (Hofstede, 1994), asserts that the values and beliefs held by members of collectives influence the behavior of individuals, and also the degree to which selected behaviors are viewed as legitimate, acceptable, and effective.

*The Filipino seafarer*

The Philippine country is composed of 7,107 islands and is bounded on the west by the China Sea, on the east by the Pacific Ocean, and on the south by the Celebes Sea (Andres, 1991). The official languages in the Philippines today are Filipino and English, along with 87 different major dialects. English is widely spoken and this country is the third largest English-speaking nation in the world. The Filipino seafarers have a good grasp of the English language and high levels of secondary and tertiary education (Andres, 1991). Hofstede presented studies where 50 countries and three regions participated (Hofstede, 1999). He wanted to measure the degree of individualism and collectivism in various countries. On the individualism index the Philippines were ranked at number 30 while Norway at 13. The results showed a strong connection between a nation's wealth and degree of individualism. Nations which scored higher on the individualism scale, such as Norway, have a culture which is primarily individual oriented, and the collective notion is not that important as to countries which score lower on the index (Hofstede, 1999). According to these results, the Norwegian and the Filipino seafarers' values are expected to differ from each other when it comes to national culture.

*The Notion of Culture*

Dictionary definitions emphasize the applied meanings of culture: moral and aesthetic values; developing, training and transmitting knowledge (Jocano, 1990).

Culture is thus viewed as a means of learning, as well as teaching ways, to become acceptable and effective member of the group. Much of what an individual is, and the way he behaves is largely due to his cultural upbringing. It is this upbringing that shapes his internal "self" and its outer manifestation, his personality. That is why culture is sometimes viewed as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 2001, p. 9). As such, it includes as well knowledge, beliefs, arts, morals, laws, customs, and other capabilities acquired by man as a member of society (Jocano, 1990). The acquisition of culture begins with birth and continues throughout life.

Culture has been defined by Kluckhohn (1951) as consisting of "patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional ideas and especially their attached *values"* (Kluckhohn, 1951, p.86*)*. The concept of culture is though applicable to any human collectivity or category as organizations, professions, an age group, entire gender or even a family (Hofstede, 2001).

According to Triandis (2000), cultures can be seen as collectivist or individualist cultures. In collectivist cultures people are more likely to sample the collective self and to think of themselves as independent with their groups (family, co-workers, tribe, co-religionists, country, etc.) rather than to sample the individual self (the independent self) and to see themselves as autonomous individuals who are independent of their groups. People in collectivist cultures tend to give priority to the goals, of their in-group than to their personal goals and they use in-group norms to shape their behavior rather than personal attitudes. There is a greater attention to the needs of others. The contrasting cultural pattern is individualism (Triandis, 2000). People in individualist cultures tend to sample the individual self where the self is conceived as independent of in-groups. People from individualist cultures give priority to personal goals and use attitudes much more than norms as determinant of their social behavior. They pay attention to their own needs only and abandon interpersonal relationships that are not optimally beneficial to them. If one is raised in an individualist culture, one pays more attention to individuals and to the internal processes of

individuals (attitudes, beliefs). If one is raised in a collectivist culture there is a greater attention to groups, roles, norms, duties, and intergroup relationships (Triandis, 2000).

*Organizational research and culture*

The term *organizational culture* springs from the underlying assumption that organizations differ in deep-rooted beliefs, meaning and values, and have different goals and certain objectives which again shape the unique specific culture in each organization (Matsumoto & Juang, 2008; Berry, Poortinga, Segall, & Dasen, 2002). Matsumoto and Juang (2008) define an organization as a structure created by people to achieve certain objectives. Organizations are composed of people who work collectively to address the overall goals of the organization. Different people of groups may have different specific goals within the organization, but theoretically they should collectively address a common goal. Different people of groups may be specialized according to role, objective or task, and rank or status within a hierarchy may differentiate them from one another. Each organization is unique, and because each contains a group of people with a way of existence, they have culture (Matsumoto & Juang, 2008). As organizations may also be seen as groups, Schein defines the culture of groups as "a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 2004, p.17).

Hofstede's definition of culture in organizations is as following: "The collective programming of the mind which distinguishes the members of one organization from another" (Hofstede, 1998, p.2). In his research, Hofstede has identified four cultural dimensions: power distance, individualism–collectivism, uncertainty avoidance, and masculinity–femininity. The individualism-collectivism index is often used in different studies of culture. This index refers to the extent to which identity derives from the self versus the collective. The degree of individualism can vary between countries and within certain countries as well (Hofstede, 1999). In the individualism-index Hofstede presented studies where 50 countries and three regions participated, and were placed on the individualism index. There was immediately evident that wealthy countries scored higher on the index, while almost all the poor countries scored lower on individualism. The results showed a strong connection between a nation's wealth and the degree of individualism in the counties' culture. Norway ranked 13 on the list,

while the Philippines ranked at number 30 (Hofstede, 1999). The norm prevalent in a given society as to the degree of individualism or collectivism expected from its members will strongly affect the nature of the relationship between a person and the organization to which he or she belongs (Hofstede, 2001).

*Subcultures*

*Nationality* and *hierarchical position* are considered important factors when shaping the culture of an organization. They can contribute to the shaping of several groups with their own unique culture, even though they belong to the same organization overall. These groups and their unique cultures are called *subcultures* within the organization (Hofstede, 1983). Studies have shown that nationality does matter when studying organizational culture (Helmreich & Merritt, 1998). Helmreich and Merritt (1998) emphasized the recognition of other subgroups in organizations as well. According to the authors, other factors may have contributed to the existence of subgroups which were rooted in people bringing their history and cultural memberships with them to their job. Hence, an organization consists of many subcultures based on profession, nationality, previous work history, location, gender and age (Helmreich & Merritt, 1998).

Hofstede did go closer into cultural differences in organizations by studying distinct subcultures in an organization (Hofstede, 1998). He emphasized the different levels organizations can be studied at. Whether studying culture at the level of an entire corporation, a national subsidiary, a product/market division (national or international), a geographic location (such as plant or laboratory), a single workgroup or a hierarchical level (such as management versus workers).

Differentiation by *hierarchical level* mentioned by Schein (2004), could also be leading to the creation of subcultures. The interaction and shared experience among the members of a given level provide an opportunity for the formation of common assumptions – a subculture based on rank and status. The strength of such shared assumptions will be a function of the relative amount of interaction and the intensity of the shared experience that the members of that level have with each other as contrasted with the members of other levels.

Another important part of the work environment of every organization besides organizational culture, is the amount of employees' satisfaction with the work and the workplace. Whether

employees are satisfied with their workplace can have a great impact on general well-being and health.


*Job satisfaction*

There are important reasons why we should be concerned with *job satisfaction*, which can be classified according to the focus on the employee or the organization (Spector, 1997). As a variable it can be considered as an indicator of emotional well-being or psychological health. Another perspective is that job satisfaction can lead to behavior by employees that affect organizational functioning. There are important implications of employee feelings which can lead to both positive and negative behaviors. Furthermore, job satisfaction can be a reflection of the organizational functioning. Differences among organizational units in job satisfaction can be diagnostic of potential trouble spots. A job satisfaction facet can be concerned with any aspect or part of a job. Facets frequently assessed include rewards such as pay or fringe benefits, other people such as coworkers or supervisors, the nature of the work itself, and the organization itself. By Locke's definition (1976) job satisfaction is "a pleasurable or positive emotional state resulting from appraisal of one's job or job experiences" (Locke, 1976 in Dunnette, p. 1304). Various studies have shown the importance of recognizing job satisfaction as a powerful factor when studying organizations. Several researchers have linked job satisfaction to other important factors in organizations such as turnover, withdrawal behavior and job performance (Saari & Judge, 2004). Both empirical and meta-analytic studies have reported that a negative relationship exists between occupational stress and job satisfaction (Fischer & Gitelson, 1983; Miles & Petty, 1975). Because of the strong relationship between job satisfaction and stress, a closer look on occupational stress is needed.

*Occupational stress*

*Occupational stress* can be thought of as job-related discomfort or illness that people experience because of their work situations (Beehr, Bowling & Bennett, 2010). This discomfort may manifest itself in a variety of ways, including coronary heart disease, headaches, restless sleep, fatigue, other somatic symptoms, and decreases in individual performance on the job (Jones & Boye, 1994). The symptoms of job stress may be psychological, psychophysiological, or behavioral in nature (Quick & Quick, 1984). Individual and organizational costs associated with job stress include low worker morale, high job turnover, employee alcohol and drug misuse, and interpersonal conflicts (Jones, 1980).

When it comes to the relationship between *occupational stress* and *job satisfaction,* researchers have been interested in the implications of these relationships (Kemerey, Bedian, Mossholder, & Touliatios, 1985). For example, do dissatisfied workers manifest more withdrawal behaviors (such as absence and turnover) than their satisfied counterparts? The empirical evidence seems to indicate that job satisfaction acts as a mediator between stress and withdrawal. Theoretically there are few withdrawal models that do not include job satisfaction as an important element or link between individual difference variables and outcome (Hendrix, Ovalle, & Troxler, 1985).

Conceptually, the link between various antecedents and job satisfaction can be understood as a cognitive process wherein the individual reports on judgments about the favorability of the work environment (Motowidlo, 1996). As workers integrate their experiences at work, they begin to plan an appropriate reaction. A reaction such as job satisfaction is a function of how favorably the environment is evaluated. According to Motowidlo (1996), favorability evaluations required judgments concerning how good or bad, how positive or negative, how likeable and unlikeable the work environment was. If stressors that made the worker feel uncomfortable were present, the environment could very well be evaluated as bad or negative, and the worker would report low job satisfaction.

*Moderators of stress*

The reporting of job related stress by employees within a variety of industries has demonstrated a marked increase in the last ten years (Bliese & Britt, 2001). Considerable attention has been focused on identifying the risk factors predisposing individuals to stress and optimal coping strategies. The role of perceived *social support* within both the home domain and the work domain has recently been re-examined as an important moderator of the occupational stress process. The presence of such support typically reduces the adverse consequences of both work-family conflict and occupational stress outcomes (Brough & Pears, 2004).

Workplace social support provided by superiors, colleagues and subordinates is generally thought to have an important stress-reducing function (Chmiel, 2000). There are numerous definitions and conceptualizations of social support. This concept is used to refer to, for example, the existence of good, pleasant relationships with others, the availability of others in the case of problems and help, as well as understanding and attention provided when one is faced with difficulties. (Buunk, 1990)

The stress-reducing functions of workplace social support are generally referred to as buffer effects, which are distinguished from direct effects (Cohen &Wills, 1985). A buffer effect occurs when social support alleviates the impact of job stressors on stress reactions, and has positive effect when strong job stressors are involved. Direct effects, on the other hand, refer to a positive influence of workplace social support on a person's health, irrespective of whether or not people are under job stress (Chmiel, 2000).

Social support is one of the major coping methods in the workplace today. Research findings have indicated that this technique is effective for reducing stress effects. Several review studies (Cohen &Wills, 1985; Latack & Havlovic, 1992) have concluded that there is a great deal of benefit to social support.

According to the presented theory, organizational culture can be influenced by specific variables within the organization, and examples of such variables relevant for the shipping industry can among other things be nationality and hierarchical position on board a ship. When studying the work environment on board a ship, other organizational factors such as job satisfaction and occupational stress emerge as important for organizations in general. In this study predictors of job satisfaction are of particular interest. According to the presented

literature, job satisfaction is often being linked to occupational stress. Social support is also mentioned as an important factor when it comes to employee's well-being.

The following study focuses on the same factors but investigates these within the specific occupation of the seafarer and the ship as a workplace. Work environmental factors are linked to the ship as an organization.

*Aims of The Thesis*

*Specific Aims of the 1st article*

One of the specific aims of the 1st article is the validation of a new measurement tool specifically designed for measuring work environment factors on board industrial and cruise ships. Several scales from the developed instrument will be used for further research on organizational culture. Further on, there is an interest in finding out whether there are significant differences in *organizational culture* when considering the variables nationality, hierarchical position and ship type. The aims of the 1st article are as follows:

1. Examining the psychometrical qualities of the dimensionality *organizational culture* derived from the new measurement instrument.

2. As the first study focuses on organizational culture, the relevant factors from the measurement instrument will be used for examining whether there are significant differences in organizational culture on board ships due to *nationality*, *hierarchical position or ship type*. The predictions are made that significant differences will occur due to different nationalities, hierarchical positions and different ship types.

*Specific Aims of the 2nd article*

The specific aims of the 2nd article are examining predictors for seafarer's *job satisfaction* on board ships by using factors from the validated measurement instrument. Especially *stress* factors and the factors containing *social support* are of interest. The psychometric qualities of the factors *job satisfaction* and *stress* are investigated. The predictors in this study are seven variables constituting *culture* and six variables which constitute *stress.* The following predictions and expectations in the 2nd article are made:

1. Stress factors will be predictive of job satisfaction

2. Organizational culture will have factors that are predictive for job satisfaction.

3. Social support as part of the organizational culture will be one of the strongest predictors of job satisfaction.

## Method

### *Sample*

215 seafarers from 24 ships and 2 Norwegian shipping companies participated in this study. All respondents were given information about the purpose of the study and about the confidentiality treatment of the material. Almost the whole sample consists of male respondents (212 male respondents, 3 female respondents). 21, 4% were of Norwegian nationality; 63, 3 % were Filipino; 11, 6 % were Indian while 0, 9% were Polish. There were also 0, 5% Swedish respondents and 1, 9% under the category of "Other". The majority of the respondents were in the age groups "20 or younger – 34" (49, 8 %) and "45 – 50 or older" (30, 7 %), while the rest were 35- 44 (19, 5 %). The respondents were also asked to report whether they worked on an Industrial ship or Passenger/ Cruise ship. 88, 1 % of the respondents were from the Industrial ships and 11, 9 % were from the Passenger/Cruise ships. 45, 1 % of the respondents reported to be Officer/Manager and 40, 5% Rating/Subordinate

For the purpose of the study in the 1st article only data from the Norwegian (21, 4 % of the respondents) and the Filipino (63, 3 %) participants were included in the analysis. In the 2nd article data from all respondents is used.

*Procedure*

In order to construct a questionnaire that is reliable and valid, the first step was the conducting of qualitative expert interviews and ship employee interviews. Eight expert interviews were carried out with people working in the shipping industry who mostly had supervisor positions or other relevant knowledge about the shipping industry. In addition six employee interviews were carried out on board an industrial ship, and six interviews were conducted on board a Passenger/Cruise ship. Together 20 semi structured interviews were carried out ranging from 20 to 60 minutes. The interviews were semi-structured and respondents were asked questions such as "What is most important for the well-being when working on board a ship?" In order to create the questionnaire, contextual content analyses of the interviews were carried out, and multiple questionnaire items were developed. In addition to the interviews, a review of literature concerning work environment and earlier measurement tools was conducted. Based on the interviews, literature review and existing measurement tools the items for the final questionnaire were shaped in English by using modified statements from the interviews. The final version of the questionnaire will be used by DNV (Det Norske Veritas) for further research.

*Questionnaire*

The questionnaire consists of 94 items (89 scale items and 15 demographical items). All items of the questionnaire can be answered on a 5-point Likert scale (Appendix 1). The participants were asked to respond to questions about the following categories: "My Company's safety and goals", "My working conditions", "My relations", "My superiors and the shipping company", "Job stress", "My job satisfaction" and "About myself". The questionnaire was made in Microsoft Excel and sent out by e-mail to the 24 ships. It took approximately 30 minutes to complete the questionnaire and after the completion participants were asked to send it back by e-mail.

Several dimensions emerged as important for the work environment on board a ship when an exploratory factor analyses was conducted. The dimensions are: *Job satisfaction*, *stress*, *working conditions*, *goals*, *organizational culture* and *safety*. Three of the factors were used in the 1st and 2nd article. The first dimension used in both articles is *Organizational Culture,* which consists of seven factors that can be seen as measuring two relationship types on board a ship: Relations with co-workers (factors 1-4) and Relations with superiors (factors 5-7). The seven factors are: *(1) Openness towards co- workers*: Measures in which amount workers

regard co-workers as friends, welcome new people, take time to listen when someone needs to talk, how much co-workers praise others when they have done a good job; *(2) Working with the opposite gender:* Measures in what degree workers are comfortable when working with the opposite gender, and whether one expect problems when working with the opposite gender; *(3) Emotional involvement in co-workers problems:* Implies whether workers ask co-workers about their eventual problems with work and family; *(4) Social grouping:* Examines if workers only socialize and like to socialize with people from their own department; *(5) Social support and feedback given by superiors*: The perceived praise by superiors, whether superiors act on suggestions given by subordinates, whether superiors give clear answers and deliver orders in satisfactory manner. The factor also measures whether superiors are perceived as good role models, make ratings feel appreciated and cared for or take comments and suggestions seriously; *(6) Trust in superiors*: The amount of perceived trust received from superiors, availability when needed, and the amount of being comfortable asking for clarification of instructions; *(7) Communication with superiors:* The degree of perceived clear messages, open-mindedness, people-profit priority, being comfortable telling about a mistake, and the perceived amount of positive feedback.

The other two dimensions used in the 2$^{nd}$ article in addition to Organizational culture are *Job Satisfaction* and *Stress* (Heidenstrøm, 2011). Job Satisfaction contains the following factors: *(1) Task Satisfaction:* Measures development and use of own competence, respect others have for the work and possibility of variation in tasks given; *(2) Rewards and Benefits*: Measures satisfaction with salary, chances of promotion, further education and other benefits; *(3) Co-workers:* Measures satisfaction with communication and treatment with and by co-workers, and their level of competence; *(4) Meaningfulness*: Measures the perception and meaning in doing tasks, satisfaction with having to do the work of others, and which degree one perceives rules and regulations as meaningful; *(5) Feeling of safety*: The factor measures the perception of job security and reliance on co–workers handling of a crisis; *(6) Balance of workload and available time:* Measures satisfaction with deadlines, amount of paperwork and quality of sleep.

The dimension of *Stress* contained these factors: *(1) Responsibility and decisions:* The perceived burden of responsibility and the perceived pressure of making decisions; *(2) Physical nuisance:* Perceived stress of unusual temperature exposure, perceived stress as a result of vibrations and noise from the ship; *(3) Liability*: Amount of perceived stress that may results by concerning about injuring co-workers and causing financial loss for the company;

*(4) Work strain and time pressure*: Perceived strain by amount of work pace, interruptions and unusual operating hours; *(5) Isolation:* Perceived strain by feeling isolated or having lack of contact with family and friends, perceived stress in connection with lack of information about the world outside the ship; *(6) Variation*: Perceived stress by lack of variation in the work.

<center>*Statistical Analysis*</center>

Statistical analyses were performed in SPSS (Statistical Package for the Social Science). Testing the internal reliability, analyses of Cronbach's alpha and average corrected item-total correlations were calculated. Principal component analyses with direct oblimin rotation were carried out. Bartlett's test of Sphericity was found to be significant and Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy indicated that the data were appropriate for factor analysis solution of 7 factors for the dimension of organizational culture, 6 factors for job Satisfaction and 6 factors as well for stress.

For the majority of the Organizational culture-scales (1-7) internal reliability was acceptable ($\alpha > .70$). Two of the scales were below the accepted Cronbach's alpha of .70 (Nunnally & Bernstein, 1994). These scales consist of 2-5 items, something that is found to affect reliability analysis negatively (Cortina, 1993). In addition the average corrected item-total correlations of these scales are of satisfactory level (higher than .30). This indicates acceptable internal consistency. The internal reliability for the three of the six job satisfaction scales was acceptable as well ($\alpha > .70$). The average corrected item-total correlations of all scales were though of satisfactory level. For the dimension of stress, five of the six scales had an acceptable internal reliability of alpha higher than .70 and an acceptable average corrected item-total correlation higher than .30. The last scale only consisted of one item and had thereby no indication of Cronbach's alpha or an intern average total correlation.

In order to establish discriminant validity, the intercorrelations between the subscales for the three dimensions are examined. When measuring different latent variables it is expected for the subscales in each dimension to be positively correlated, although not too highly. The correlations between the subscales for all dimensions were in general weak to moderate which gives satisfactory discriminant validity.

To test whether there were significant differences in organizational culture due to nationality, hierarchical position and ship type in the first article, a multivariate variance analysis

(MANOVA) was conducted. MANOVA gives overall tests of the effects of dimensions. This may serve to ensure against inflation in the probability of Type 1 errors, as the account the association amongst the criterion variables. MANOVA also makes it possible to estimate discriminate functions that can be interpreted as latent variables tapped for the individual scales. In order to obtain discriminant validity, each of the variables nationality, hierarchical position and ship type were set as independent variables in three different analyses. The dependent variables in each case were the seven subscales from the cultural dimension. Power analysis and effect size of Cohen's *d* was also conducted.

In the second article several hierarchical linear block regression analyses were conducted with overall job satisfaction as the criterion variable, and then with each of the job satisfaction factors alone as the criterion variable. Examining the predictors of overall job satisfaction in the first block, the six subscales of stress were inserted. In the second block the first four scales measuring relationships with co-workers from the Organizational culture dimension were added, and the remaining three organizational culture scales measuring relationships with superiors were added in the last third block. Additional six hierarchical linear block regression analysis were conducted with each of the six job satisfaction factors being the criterion variables in each analysis.

## Results

### Results from the 1st Article

The aims of the first article were to examine whether there were significant differences in organizational culture when it comes to nationality, hierarchical position and ship type. Two of the three predictions were supported. The results showed an overall significant difference for the seven organizational culture scales for nationality. The results may indicate that people from different nationalities differ when it comes to organizational culture. Especially high significant difference emerged when it comes to the factors (*2*) *Working with the opposite gender* and (*5*) *Social support and feedback given by supervisors*. On the 5-point Likert scale a high score indicated a positive attitude towards working with the opposite gender, and a low score indicated a negative attitude towards working with the opposite gender. According to the results, Norwegian seafarers were more positive when asked about working with the

opposite gender while Filipino seafarers scored a little bit lower. When it comes to perceived social support and feedback from superiors, Norwegian seafarers scored lower while Filipino seafarers scored higher indicating a greater perceived support by superiors amongst Filipino seafarers than from Norwegian seafarers. Two of the subscales showed a small and a medium effect size, though the effect was not found to be significant. This may be an indication of a low sample size and a need for a larger sample in order to obtain significant effect size results.

The prediction that hierarchical position (superior/subordinate differences) will lead to differences in organizational culture was supported as well. An overall significant difference was found for the seven culture scales for superior/subordinate. The significant difference indicates that organizational culture is being shaped by differences between superiors and subordinates. A significant effect of hierarchical position on the factor *(3) Emotional involvement* emerged as especially high.  This may indicate that officers/managers show greater concern about co-workers problems with work or family than ratings/subordinates do. The effect sizes for the scales were ranging from medium to small, though they were not found to be significant. Again the sample size may have been decisive.

The third prediction that there will be significant differences in organizational culture due to ship type-differences was not supported. There were not found overall significant differences for the seven culture scales when it comes to ship type. According to the results people working on different ships do not differ in organizational culture. On the other hand the effect-size on several factors showed medium to small effect. Even though there were no overall significant differences between ship types, the value of Cohen's d may indicate that this could have turned out differently given a larger sample size. The distributions of respondents between the two ship types was also quite uneven (Industrial N= 144 and Cruise N= 20) and this is something that can be considered. A larger and more even distributed sample size may have contributed to a significant result.

*Results from the 2<sup>nd</sup> Article*

The first prediction made in the 2nd article stated that stress will be a significant predictor of job satisfaction. The results of the hierarchical regression analysis showed that the prediction was supported. The stress variables did significantly contribute the explained variance in overall job satisfaction in the first block. By adding the four first factors of organizational culture in the second block and the remaining three culture factors in the third block, the explained variance in overall job satisfaction increased considerably. These results also supported the prediction that organizational culture will have factors that are predictive for job satisfaction. The third prediction stated that the factor measuring social support, which is a part of the organizational culture, will be one of the strongest predictors of job satisfaction. The factor *(5) Social support and feedback given by superiors* did emerge as a strong predictor. The prediction is supported as well due to the strong significant result of the variable on job satisfaction ($p < .001$). Especially social support can be seen as explaining a big part of job satisfaction, as it also was shown to be a strong predictor in all the five hierarchical block analysis for each single job satisfaction factor.

## Discussion

In addition to the several hypotheses stated in this study, one of the main purposes of the study was to develop a questionnaire tool specifically designed in measuring work environment on board industrial and cruise ships. The questionnaire components were tested for validity and reliability and the results emerged as satisfactory. The general aim of the whole thesis was to focus on work environment within the maritime industry and especially show some deeper insight for the ship as an organization. Based on the questionnaire tool, important elements of the work environment were seen in light of previous theory. To the author's knowledge, there is a lack of previous research connecting work environment and the ship as an organization, therefore the results in this thesis are discussed in a more general manner. The three major dimensions organizational culture, job satisfaction and occupational stress, which this thesis focuses on, are further on discussed together with other variables emerged as important in the study.

The results in this study highlight the importance of the nationality variable when one decides to study organizational culture. The organizational culture is as earlier mentioned a specific culture with its own and unique values, beliefs and rituals adapted by the workplace, by its employees and leaders (Matsumoto & Juang, 2008; Berry, et al., 2002). In the first article the results of the analysis showed significant differences in organizational culture between Norwegians and Filipinos. Nationality seems to play an important role in the shaping of the organizational culture on board ships. The shipping industry is characterized as a highly multinational organizational sector where the culture on board ships is highly being shaped by seafarer's background and nationality. Seafarers with a cultural background from Norway and seafarers who come from the Philippines have each their own distinctive culture that can interfere with the overall culture the ship has as a workplace. As already mentioned, the two different nationalities differed in degree of individualism according to Hofstede's studies (Hofstede, 1999). Triandis (2000) mentioned the difference between collectivist and individualist cultures as well. Differences linked to these characteristics may be leading to different understanding of the organizational culture on board a ship. This is something that has to be studied further by focusing on the factor multinationality.

By using the nationality variable, one is able to find out whether there can emerge cross-country differences in organizational culture. It is important to note that the term nationality does not reflect actual cultural differences in this thesis. It rather gives an indication of an important variable that should be given attention in further studies. The concept of subcultures may in this case be useful when studying a multinational workplace. It can lead to a better understanding of the different nationality's preferences when working on board a ship, and how one eventually can improve the working conditions and solve problems that may occur. Even though there was not any focus on the nationality variable in the second article, it can be considered an important variable for further studies concerning multinational workplaces.

When looking at superior/subordinate differences in organizational culture, the results came out significant as well, as in the case of nationality differences. Especially the variable *Emotional involvement in co-workers problems* showed strong significant results. It can be discussed whether superiors or subordinates execute a greater emotional involvement when interacting with the people they work with. Most likely superiors feel the need to be leaders and try to support their co-workers in every way possible. Subordinates may not feel free to

involve too much in each other's personal problems. The different ways superiors and subordinate perceive their daily contact with co-workers showed to have an impact on the overall organizational culture. This again can be seen as an example of a subculture distinction as subordinates and superiors create their distinctive values and beliefs that are not necessarily identical. Schein (2004) emphasized that hierarchical level could lead to the creation of subcultures in his studies as well. He argued that daily interaction with members of the same work group may provide an opportunity for the formation of common assumptions.

When it comes to organizational culture, no significant differences between the industrial and the cruise ships were found. This indicates that seafarers working on cruise ships and seafarers working on industrial ships have a similar understanding of the organizational culture and do not differ. The results can though not be seen as ultimate. The sample sizes for respondents from cruise ships and respondents from industrial vessels were quite uneven (Industrial n= 144, Cruise n= 24). This uneven distribution may cause results that could have turned out different given an even sample distribution for both ship types. Industrial ships and cruise ships differ very much in the kind of goods they are transporting. While industrial ships often transport merchandise, cruise ships "transport" people. This alone should be a basis for two different organizational cultures. In addition, though the results from the MANOVA analysis were not significant, the strong effect size may indicate that sample size is an important obstacle in order for the analysis to have turned out significant.

A more thorough examination of the variables nationality and hierarchical position could be relevant for future research. The nationality variable in this thesis does not show the underlying cultural traits of the specific country. By considering the actual nationalities and their cultural characteristic, a more detailed study on differences in organizational culture can be possible in terms of further research. The same applies to the variable hierarchical position. Studying the different working positions on board ships and their specific characteristic could lead to more knowledge, and more detailed results when studying organizational culture.

Job satisfaction on board ships can be influenced by many factors. Earlier literature has shown the strength of the relationship between stress and the amount of job satisfaction employees' experience (Fischer & Gitelson, 1983; Miles & Petty, 1975). There was an expectation about stress being a significant predictor of overall job satisfaction in the second article. This prediction was supported. The factor *(4) Work strain and time pressure* emerged as one of the strongest predictors of job satisfaction amongst the six stress factors. This factor measures perceived stress as a result of unusual working hours, which is common seen for the occupation of the seafarer. The occupation of the seafarer is general known as being stressful and physically demanding (Kristiansen, 2005). The findings match these general known conditions and confirm the importance of recognizing stressors, and trying to diminish them in order to increase job satisfaction for the occupation of the seafarer.

As the hypothesis further on stated, organizational factors would also be strong predictors of job satisfaction. The hypothesis was confirmed, as adding the seven culture factors led to an increase of explained variance as well as diminishing the predictive power from the stress factors. These are interesting results that have to be discussed in connection with the specific traits of the occupation of the seafarer. The dimension *Organizational culture* was further discussed in terms of two relationship types. *Relationships with co-workers* were the first three factors, while *Relationships with superiors* the remaining four. By adding the factors which constitute Relationships with co-workers, the explained variance in the regression analysis did increase. These results emphasize the important part of interpersonal relationships on job satisfaction on board ships. Seafarers spend both work and free time together with their co-workers. The factor *(1) Openness towards co-workers* showed significant results after all variables were added. The factor measures whether seafarers see each other as friends besides of co-workers, how they welcome new people to the ship and whether they receive and give feedback to each other when they do a good job. Because of the close relationships seafarers have on board ships both on and off shift, the crew has also been described as a "24 hour community" (Kristiansen, 2005). Baron (1996) considered interpersonal factors related to individuals as utterly important in organizations. He argued that social relationships and the way workers think about each other are the foundations of organizational conflicts and stressors. Adding the remaining four factors which constitute Relationships with superiors, the explained variance increased drastically. Barnett and Marshall (1991) as well mentioned in particular the importance of the relationship between

worker and superior in organizations. The three factors constituting relationships with superiors in the study have a great predictive strength on job satisfaction. The results show how having a positive organizational culture on board ships, which is manifested in good interpersonal relationships between co-workers and their superiors, is predictive for high job satisfaction for the occupation of the seafarer and the ship seen as an organizational organ. The factor (*5) Social support and feedback given by superiors* came out to be especially important when predicting job satisfaction. The third hypothesis about social support being a strong predictor in this study was supported. The factor measures whether superiors are perceived as good role models, make subordinates feel appreciated and cared for, and take comments and suggestions seriously. The fact that this factor has such great predictive value emphasizes the importance of the good relationships between workers and superiors. Brough and Frame (2004) also found that supervisor support was associated with job satisfaction. Schirmer and Lopez (2001) found a connection between levels of supervisor support and reduced reported levels of psychological strain in their study. Similar findings about the role of superior support were found by other researchers (Bliese & Castro, 2000). The importance of the support coming from one's superior can be seen in connection with the absence from one's family and home. It is difficult to communicate with family and home when out at sea, and seafarer's might benefit from a supporting superior. A superior may become a significant source of support which again may lead to a better psychological well-being and an increase on job satisfaction. Further on, the emerging of this factor as most significant in comparison to the other organizational culture factors states how interpersonal relationships can be seen as more important than factors as salary and chances of promotion. The value of support and feedback matters a great deal for seafarers and can be seen as a kind of reward itself.

To sum up, occupational stress and organizational culture did emerge as significant predictors of job satisfaction as it also was hypothesized. Stress seemed to be a significant predictor of job satisfaction when it comes to the occupation of the seafarer. Furthermore, the organizational culture factor *(5) Social support and feedback given by superiors* emerged as the strongest predictor of job satisfaction at the same time as the predictive power of the stress factors decreased. These results can indicate a buffering or moderating effect of social support on stress in this study. Similar results emerged in previous studies conducted within different occupational areas (Buunk, 1990; Chmiel, 2000; Cohen & Wills, 1985; Latack & Havlovic, 1992).

By examining the factors organizational culture, job satisfaction and occupational stress in the two articles, this thesis reveals variables important for the ship as an organization. It is vital to pursue in taking a closer look into the organizational factors of the ship in further studies as well, order to contribute to further research for this occupational area.

*Methodical Challenges*

The sample size in this study consisting of 215 respondents was not optimal. Still Bartlett's test of Sphericity was found to be significant and Kaiser- Mayer – Olkin (KMO) measure of sampling adequacy indicated that the data were appropriate for further tests.

The self-developed questionnaire in this thesis was used for the first time. The psychometric properties of the questionnaire show some room for improvement. Some items yielded a Cronbach's value of below the accepted .70 (Nunnally & Bernstein, 1994; Field, 2005). Although, according to Stewart, Hays, and Ware (1993) reliability values of .50 or above can be considered acceptable for group comparisons. In addition, the average corrected item-total correlations of the scales in question turned out to be of satisfactory level (higher than .30). This indicated acceptable internal consistency.

Another factor that can be seen as a limitation is the language of the survey which was developed in English only. In order to be sure that all questions were understood correctly, it may have strengthened the study if the questionnaire was translated into Filipino as well as into Norwegian. Though, shipping companies require good English skills when hiring seafarers, and it is assumed that the questionnaire items were understood correctly in this study. In addition, English is one of the two official languages on the Philippines, and thereby the decision was made to use English questionnaire only.

Issues of generalization should also be mentioned. This study can only be representative for seafarers from Norwegian shipping companies and cannot be generalized to the whole seafarer population. Though, the general trends in this thesis can be seen as relevant for shipping companies from other countries as well. Another issue was the uneven distribution of respondents from industrial and from cruise ships. 88, 1 % of the respondents were from the Industrial ships while 11, 9 % from the cruise ships. As these are two different kinds of ship types and the distribution between the respondents was uneven, one should be careful to generalize the results from this study for all types of ships.

The gender distribution in this study was also quite uneven, which can be seen as another methodological limitation. As there were only 3 female respondents from the total of N=215, the results in this study can only be representative for male seafarers.

Another important issue is social desirability which is often linked to questionnaire responses. This implies the respondent's willingness to manipulate his or her answer according to what he or she regards as socially appropriate. This is a well-known methodological problem related to the use of self-report data.

In this thesis, nationality differences cannot be seen as the same as cultural differences. This is important to be mentioned. In order to obtain a deeper knowledge of the cultural implications for this kind of study, demographical conditions as well as social factors have to be considered. Although this study does use a tool for measuring organizational culture, and in that sense the notion of culture is being involved. As this study also doesn't examine the interaction between the variables involved, it is something that can be considered for future studies.

*Future Research Implications*

Future research should include more respondents. It is also suggested the need of an even distribution of gender, and an even distribution between respondents from industrial ships and cruise ships. In order to be able to examine interaction effects, important factors such as demographical variables and social environment should be considered in future research as well. The variable nationality in the current study did not say something about the culture orientation of the respondents. Measures of cultural orientation are suggested for further studies in order to be able to gain a deeper understanding for possible factors that may influence organizational culture and job satisfaction. The term organizational culture can be further on linked to distinctive culture on board cruise ships and on board industrial ships. Even though this study did not show significant results for differences in organizational culture between the two ship types, given a greater sample the results may turn out differently.

*Conclusion*

In light of the results in both articles, the dimensions organizational culture, job satisfaction and occupational stress emerged as significant for the occupation of the seafarer. The variables nationality and hierarchical position emerged as significant when studying organizational culture on board ships. When it comes to the predictors of job satisfaction, occupational stress and interpersonal factors such as social support emerged to be significant. In this study, the factor of social support did emerge as the strongest predictor of job satisfaction. These results shed light on the importance of interpersonal factors, as they seem to be affecting the perception of job satisfaction amongst seafarers.

Even though there is lack of previous studies that specific investigate the psychosocial work environment for the ship as a workplace, the current study is believed to have made contributions in the examining of organizational factors linked to the occupation of the seafarer. The study provides suggestions of factors that may be important for further future studies within the maritime industry.

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# 1<sup>st</sup> Article of Master Thesis in Psychology:

An Investigation of Organizational Culture on board Ships

**Abstract**

The aim of the study was to examine whether there were significant differences in organizational culture on board ships when looking at the variables nationality, hierarchical position and ship type. 215 Norwegian and Filipino seafarers from 24 ships participated in the study. The response rate was at 35% for the whole sample. Multivariate analysis revealed overall significant differences for the seven culture dimensions. In addition a significant difference of nation on the two factors (2) Working with the opposite gender and (3) Social support and feedback given by superiors emerged. Further multivariate analyses showed resulted in overall significant differences between hierarchical positions on organizational culture and especially on the factor (3) Emotional involvement in co-workers problems. The results emphasize the importance of including variables as nationality and hierarchical position when studying organizational culture within the maritime industry.




KEYWORDS; *Organizational culture, Nationality, Subculture, Hierarchical position, Norwegian seafarers, Filipino seafarers*;

## Introduction

According to the International Maritime Organization (IMO, 2010) the shipping industry is today one of the most international of all the world's greatest industries. The world shipping fleet is also registered in over 150 nations, and manned by over one million seafarers (Hetherington, Flin, & Mearns 2006). The people working in the shipping industry experience a great deal of accidents and failure according to safety procedures. Most of the literature and research is dealing with these problems, and safety culture is one central element in these studies (Hetherington, et al., 2006). The concept of organizational culture linked to the maritime shipping industry is mostly being included in studies concerning safety culture (Kristiansen, 2005; Håvold 2000, 2007). The shipping industry is hence seen as a hazardous work environment in general. One key aspect is the relation between the job or task requirements and the human capacity (Kristiansen, 2005). Factors such as mental capacity to process information, motivation, and interaction with colleagues have to be taken into consideration when studying culture on board ships.

Seen beyond the safety problematic, the ship as a workplace itself is very different from workplaces on land. Perhaps the most important and obvious reason is that a ship is a moving workplace. That is why it is also an interesting field to examine organizational culture factors which are crucial for the ship as a workplace. Another important condition to take into consideration is how seafarers as members of a crew spend both their work and free hours on the ship and work close together as well as on duty and on free watch. This type of closeness is special for a work environment. In occupations on shore people separate time at work and leisure time. On board a ship this is not an option (Kristiansen, 2005). Stress can also occur due to other job related factors such as separation from family, bad social and interpersonal relationships and unpredictable change in the industry which leads to uncertainty about whether one is going to keep the position (Parker, Hubinger, Green, Sargent, & Boyd, 1997). Parker and his colleagues (1997) have studied the effect of organizational factors on health. Some of the factors found which may influence performance of crew members were insufficient feedback on managements work efficiency, lack of social support, conflicts, lack of information, and lack of loyalty both ways in the organization. The most pronounced difference was found on relationships with others and home-work interface. The relationship problem is mainly attributed to the fact that seafarers work and live together with the same people for long periods.

In addition to these human factors affecting the environment on board a ship, the ship as a workplace has become progressively multinational over the last few decades (Håvold, 2007). A 1999 census showed a total of 34,388 seafarers on Norwegian registered vessels with nearly 50% of the sailors from countries other than Norway (Statistics Norway, 2000). This is something that implies that the crew of the vessels may differ strongly as regards their cultural backgrounds (Håvold, 2007). Hofstede (1980, 2001) studied national culture and its effect on organizations and his studies revealed four largely independent dimensions of differences in national cultures. Helmreich and Merritt and (1998) also found a link between national culture, organizational culture and safety.

The mentioned research gives indications that there has been done some research when it comes to nationality and safety. In the following study it is of interest to investigate whether nationality is a contributor to differences when it comes to the dimension of organizational culture on board a ship.

*Culture*

The concept of culture has been the subject of considerable academic debate in the last twenty – five years, and there are various approaches to defining and studying *culture* (Schein, 2004). This debate according to Schein (2004) is a healthy sign in that it testifies to the importance of culture as a concept, but at the same time it creates difficulties for both the scholar and the practitioner if definitions are unclear and usages are inconsistent.

Culture has been defined in many ways and one well- known anthropological consensus definition is that culture consists in "patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional ideas and especially their attached values" (Kluckhohn, 1951, p. 86).

Hofstede defines culture as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 2001, p. 9). Therefore culture is a phenomenon at the group, institutional, or societal level, even though it has a strong relevance for predicting individual's behaviors (Ng, Sorensen, & Yim, 2009).

The word culture is usually reserved for societies (operationalized as nations or as ethnic or regional groups within or across nation). Basically, the word can be applied to any human

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collectivity or category: an organization, a profession, an age group, an entire gender, or a family (Hofstede, 2001). Hofstede (1980, 2001) conceptualizes cultural differences in terms of cultural dichotomies. In his original studies of IBM workers, Hofstede identified four cultural dichotomies which are high versus low power distance, high versus low uncertainly avoidance, masculinity versus femininity, and collectivism versus individualism.

Triandis (2000) defines culture as a "shared meaning system, found among those who speak a particular language dialect, during a specific historic period, and in a definable geographic region "(Triandis, 2000, p. 146). It functions to prove the adaptation of members of the culture to particular ecology, and it includes the knowledge that people need to have in order to function effectively in their social environment. Triandis uses the concept of individualistic and collectivistic cultures. He offers a more detailed and sophisticated understanding of the individualism – collectivism phenomenon which differs from Hofstede's concept (Shiraev & Levi, 2004). Triandis concept offers a greater variety among the two dimensions, since he recognizes that some cultures are more collectivistic than others. He emphasizes that culture shapes people to pay more attention to individuals and to the internal processes of individuals (attitudes, beliefs) if people are raised in individualist cultures, and they pay more attention to groups, roles, norms, duties, and intergroup relationships if people are raised in a collectivist culture (Triandis, 2000).

According to Shiraev and Levi (2004) there are perhaps hundreds of definitions of culture. Some of them are brief, like one proposed by Herskovits (1948), who considered culture as the human made part of the environment. Other definitions are more specific and state that culture is a wide range of settings in which human behavior occurs. Culture is manifested through particular behaviors and values typically transmitted from generation to generation, and held by individuals of society. Culture may also be a label for a set of contextual variables (political, social, historical, ecological, etc.) that is thought by researchers to be theoretically linked to individual behavior. In brief, most existing definitions of culture focus on ideas, values, practices, norms, roles, and self-definitions (Triandis, 2000).

For the purpose of this article, the definition of Hofstede (2001) which distinguishes members of one human group from another will be used. Since the concept of culture can be studied at the level of a country, a geographical location, a work group or an organization in this case, it is important to clarify and specify the term organizational culture as well.

*Culture in organizations*

A particular need to explore and understand culture has arisen among public sector research (Jung, et al., 2009). Researchers are looking for explanations, and they are trying to understand and conceptualize organizational culture, its nature, its key determinants and predictors, as well as the relationships among culture's diverse set of variables. Researchers are interested in the management of organizational culture, and they are looking for answers and solutions to how an organization's culture can be changed and adjusted to meet organizational needs (Jung, et al., 2009).

*Organizational culture* is defined at the level of organizations (Berry, Poortinga, Segall, & Dasen, 2002). The underlying assumption is that organizations differ from each other not only on variables such as production techniques, marketing, and the attitudes of their employees, but also in respect of deep-rooted beliefs, meaning, and values. Deal and Kennedy (1982) distinguish between the "inner values", "rituals", and "heroes" of an organization as determinants of its success. Heroes are significant figures (the company founder or other senior executives with larger influence). Matsumoto and Juang (2008) define an organization as a structure created by people to achieve certain objectives. Organizations are composed of people who work collectively to address the overall goals of the organization. Different people of groups may have different specific goals within the organization, but theoretically they should collectively address a common goal. Different people of groups may be specialized according to role, objective, or task, and rank or status within a hierarchy may differentiate them from one another. Each organization is unique, and because each contains a group of people with a way of existence, they have culture (Matsumoto & Juang, 2008). Organizational culture can also be defined as a meaning - and information system shared within an organization and transmitted across successive generations of members, that allows the organization to survive and thrive (Matsumoto & Juang, 2008).

When applying the concept of culture to groups, organizations, and occupations, there will almost certainly be a conceptual and semantic confusion according to Schein (2004), who argues that such social units are themselves difficult to define unambiguously. Schein used the critical defining characteristic of a group and the fact that its members have a shared history. Any social unit that has some kind of shared history will have evolved a culture, with

the strength of that culture dependent on the length of its existence, the stability of the group's membership, and the emotional intensity of the actual historical experiences they have shared.

Commonly used words relating to culture emphasize one of its critical aspects – the idea that certain things in groups are shared or held common. Schein (2004) defines the culture of groups as "a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 2004, p. 17). Not all groups evolve integrated cultures in this sense. There are groups, organizations, and societies in which certain beliefs and values work across purposes and ambiguity (Martin, 2002). This may result from insufficient stability of membership, insufficient shared history of experience, or the presence of many subgroups with different kind of shared experiences. Ambiguity and conflict also result from the fact that each of us belongs to many groups. What people bring to any given group is influenced by the assumptions that are appropriate to other groups they belong to (Schein, 2004).

Hofstede's work on culture and the four cultural dimensions he developed has helped many researchers to study and evaluate a number of organizational behaviors and management practices (Kirkman, Lowe & Gibson, 2006; Hofstede, 1980; Hofstede, 2001). He adjusts his culture definition mentioned about to organizations: "The collective programming of the mind which distinguishes the members of one organization from another" (Hofstede, 1998, p.2). As mentioned earlier he identified four cultural dimensions – power distance, individualism – collectivism, uncertainty avoidance, and masculinity – femininity. Power distance is the extent to which the less powerful members in organizations accept unequal power distribution. Individualism – collectivism refers to the extent to which identity derives from the self versus the collective. Uncertainty avoidance refers to the extent to which uncertain, unknown, or unstructured decisions are perceived as a threat by employees. A high – uncertainty – avoidance culture will have explicit rules and policies so that people have shared guidelines to follow. Masculinity – femininity is concerned with the thinking and doing. In a masculine culture, assertiveness, career achievement, and social recognition are emphasized. On the contrary, in a feminine culture, the depth and quality of relationships are emphasized (Hofstede, 2001; Ng, et al., 2009).

Schein's definition of organizational culture, where he defines it as culture of a group which shares basic assumptions passed on to new members of the group as the correct way to perceive, think and feel (Schein, 2004), will be used in this article when talking about organizational culture on board a ship.

It is important to note that the same organization may embrace multiple cultures, different and even incompatible beliefs, values and assumptions held by different groups of employees. The culture in this various groups of employees may differ in nationality, hierarchical positions, or because of a different geographical location than the rest of the organization. In this matter this different cultures are referred to as subcultures in organizations. Studies of such subcultures will be presented below.

*Studies of subcultures in organizations*

*Nationality* can be seen as one factor contributing to differences in one organization's culture. Hofstede (1980, 1983, & 2001) is a major spokesman for the importance of considering national culture in organizations. He emphasizes that nationality is important for at least three reasons (Hofstede, 1983). One of them is the fact that nations are political units, rooted in history, with their own institutions: forms of government, legal systems, labor and employer's association systems. Not only do the formal institutions differ, but even if we could equalize them, the informal ways of using them differ. The second reason why nationality is important is sociological. Nationality or regionality has a symbolic value to citizens. The third reason why nationality is important is psychological. Thinking is partly conditioned by national culture factors. This is an effect of early life experiences in the family and later educational experiences in schools and organizations, which are not the same across national borders. Through peoples experience we become "mentally programmed" to interpret new experiences in a certain way (Hofstede, 1983).

Merritt (2000) studied organizational culture, national culture and safety in their study of 9400 male commercial pilots in 19 countries. They used Hofstede's indexes of national culture in the replication study. Their replication was successful and confirmed that national culture exerts an influence on cockpit behavior over and above the professional culture of pilots. They argue that "one size fits all" training is inappropriate. Helmreich and Merritt (1998) findings showed that situations where national and organizational cultures were in

harmony there were no stress factors that influenced safety however, in situations where the values in the national culture and the organizational culture are in conflict, this might lead to stress (Helmreich & Merritt, 1998). The authors emphasize the recognition of other *subgroups* in organizations as well. According to the authors there are many factors contributing to the existence of subgroups which are rooted in people bringing their history and multiple cultural memberships with them to their job. Hence, an organization consists of many subcultures based on profession, previous work history, location, gender and age (Helmreich & Merritt, 1998).

Håvold (2000) studied the effect of national culture on safety behavior. The results showed support for the inclusion of national and regional culture on safety factors among seafarers working in Norwegian shipping companies. Organizations within the maritime industry have mostly been studied in matters of accidents and safety. The terms safety climate and safety culture can be seen as are a part of the broader term of organizational culture.

Hofstede did go closer into cultural differences in organizations by studying distinct subcultures in an organization (Hofstede, 1998). He emphasizes the different levels organizations can be studied at. Whether studying culture at the level of an entire corporation, a national subsidiary, a product/market division (national or international), a geographic location (such as plant or laboratory), a single workgroup or a hierarchical level (such as management versus workers).

Another potential subculture formation can burst from the different positions and tasks superiors and subordinates execute. In a study of a large Danish insurance company Hofstede (1998) uncovered three subcultures: professional subculture (top management), administrative subculture (administrative departments) and *"customer interface"* subculture (personnel of the sales offices). In this study Hofstede emphasized the need for complex organizations to be aware of the cultural variety within the organization. Within the insurance industry in which the case took place, subculture conflicts in companies do not seem to be rare (Hofstede, 1998).

According to Schein (2004) all organizations undergo a process of differentiation as they age and grow. The major bases on which such differentiation occur are functional/occupational differentiation, geographical decentralization, differentiation by product, market, or technology; divisionalization and differentiation by hierarchical level. The concept of geographical differentiation states that the creation of subcultures is established when the

organization grows to the point that the leadership decides to break into several geographical units. The cultural consequences are that geographical units inevitably adopt some of the assumptions of the host culture in which they operate. Subsidiaries or sales units that operate in different countries are inevitably influenced by the cultures of those countries, even if they are staffed primarily by employees and managers from the home country.

The differentiation by hierarchical level that Schein mentions, could too be leading to the creation of subcultures. The interaction and shared experience among the members of a given level provide an opportunity for the formation of common assumptions – a subculture based on rank and status. The strength of such shared assumptions will be a function of the relative amount of interaction and the intensity of the shared experience that the members of that level have with each other as contrasted with the members of other levels. Thus a top-management team that functions in isolation at corporate headquarters is quite likely to form a subculture. Similarly, a group of supervisors in a large geographically isolated plant or a group of workers in a union will interact primarily with each other and therefore eventually form a subculture.

Considering the mentioned studies above it appears that national culture and hierarchical position contribute to variation in the culture of different organizations. In the same matter the shipping industries and their ships too can be influenced by this type of variables. Therefore it is of interest to find out more about whether nationality and hierarchical status influence the organizational culture for the sample in this study of seafarers, considering the studies from different industries. The mentioned studies above are mainly conducted in the fields of industry and aviation. The maritime studies by Håvold (2000, 2007) are mainly linked to safety, rather than the concept of organizational culture as a whole .The lack of earlier studies linking nationality, hierarchical position and ship types to organizational culture within the shipping industry demands the need to discuss these factors in a more general matter further on in this paper. Nevertheless, the lack of previous studies shows the need of suitable measurement tools which can measure environmental dimensions such as overall organizational culture in shipping.

*Aims of the study*

The specific aim of this study is to develop an instrument measuring work environment suited for the shipping industry. Several scales of this instrument will be further used for research in a second article which is included in this thesis.

The first step before further research is to examine the psychometrical qualities of the new instrument. The instruments psychometrical qualities and dimensionalities need to be examined together with reliability and validity of the measurement instrument. The dimension which this study focuses on *is* organizational culture.

It will be examined whether there are significant nationality differences in organizational culture. The two nationality groups in this study are Norwegian and Filipino seafarers. In addition there will be examined whether there is a difference between being subordinate or superior on board the ship and whether there are differences between the ship types Industrial and Cruise when it comes to organizational culture. According to earlier research the results will be discussed.

According to earlier mentioned theories these expectations are made:

H1 There are significant nationality differences in organizational culture.

H2 There are significant superior/subordinate (hierarchical position) differences in organizational culture.

H3 There will be significant ship type differences in organizational culture.

## Method

*Sample*

The data used in this thesis was obtained from respondents on 24 ships from 2 Norwegian shipping companies. All participants were informed that participating was voluntary and about the confidentiality treatment of the material.

There were 215 respondents from both companies. Almost the whole sample consists of male respondents (212 male respondents, 3 female respondents). 21, 4% were of Norwegian

nationality; 63, 3 % were Filipino; 11, 6 % were Indian while 0, 9% were Polish. There were also 0, 5% Swedish respondents and 1, 9% under the category of "Other". One respondent did not report his/her nationality. For the purpose of this study only the Norwegian and Filipino sample were included in the analysis. The majority of the respondents were in the age groups "20 or younger – 34" (49, 8 %) and "45 – 50 or older" (30, 7 %) while the rest were 35- 44 (19, 5 %). The respondents were also asked to report whether they worked on an Industrial ship or Passenger/ Cruise ship. 88, 1 % of the respondents were from the Industrial ships and 11, 9 % were from the Passenger/Cruise ships. 45, 1 % of the respondents reported to be Officer/Manager and 40, 5% Rating/Subordinate. In this case14, 4 % of the total 215 respondents did not report their position and are thereby missing.

*Procedure*

In addition to develop a reliable questionnaire tool, qualitative expert interviews and ship employee interviews were first carried out. Eight expert interviews were carried out with people working in the shipping industry who mostly had supervisor positions or other relevant knowledge about the shipping industry. In addition six employee interviews were carried out on board an industrial ship and six interviews were conducted on board a Passenger/Cruise ship. Together 20 semi structured interviews were carried out ranging from 20 to 60 minutes.

Contextual content analyses of the interviews were carried out in order to create the questionnaire. Multiple questionnaire items were developed to explore the work environment on board ships. In addition to the interviews a review of literature concerning work environment and earlier measurement tools was conducted. Based on the interviews, literature review and existing measurement tools the items for the final questionnaire were shaped in English. The final version of the questionnaire will be used by DNV (Det Norske Veritas) for further research.

*Questionnaire*

The questionnaire was made in Microsoft Excel and sent out by e-mail to the 24 ships. All respondents were informed about the purpose of the study. In total the questionnaire consisted of 94 items (89 scale items and 15 demographical items). All items of the questionnaire had to be answered on a 5-point Likert scale. Appendix 1 shows the questionnaire items. The

participants were asked to respond to questions about the following categories: "My Company's safety and goals", "My working conditions", "My relations", "My superiors and the shipping company", "Job stress", "My job satisfaction" and "About myself". The questionnaire took approximately 30 minutes to complete. After the completion of the questionnaire, the participants were asked to send the questionnaire back by e-mail.

Several dimensions emerged as important for the work environment on board a ship when an exploratory factor analyses was conducted. The dimensions were: *Job satisfaction*, *Stress*, *Working conditions*, *Goals, Organizational culture* and *Safety*. Further in this article, the dimension Organizational Culture is going to be the one discussed. It can be mentioned that the dimension consists of seven factors which can be seen as measuring two main relationship types on board a ship: Relations with co-workers (factors 1-4) and Relations with superiors (factors 5-7). In this article the focus will be on all seven factors discussed as one dimension measuring Organizational Culture. The seven factors are : *(1) Openness towards co- workers*: Measures in which amount workers regard co-workers as friends, welcome new people, take time to listen when someone needs to talk, how much co-workers praise others when they have done a good job; *(2) Working with the opposite gender:* Measures in what degree workers are comfortable when working with the opposite gender, and whether one expect problems when working with the opposite gender; *(3) Emotional involvement in co-workers problems:* Implies whether workers ask co-workers about their eventual problems with work and family; *(4) Social grouping:* Examines if workers only socialize and like to socialize with people from their own department; *(5) Social support and feedback given by superiors*: The perceived praise by superiors, whether superiors act on suggestions given by subordinates, whether superiors give clear answers and deliver orders in satisfactory manner. The factor also measures whether superiors are perceived as good role models, make ratings feel appreciated and cared for or take comments and suggestions seriously; *(6) Trust in superiors*: The amount of perceived trust received from superiors, availability when needed, and the amount of being comfortable asking for clarification of instructions; *(7) Communication with superiors:* The degree of perceived clear messages, open-mindedness, people-profit priority, being comfortable telling about a mistake, and the perceived amount of positive feedback.

*Statistical analysis*

An exploratory factor analysis was conducted in order to reveal the factors included in the organizational culture dimension. Principal component analyses with direct oblimin rotation were carried out. Bartlett's test of Sphericity was found to be significant and Kaiser- Mayer – Olkin (KMO) measure of sampling adequacy indicated that the data were appropriate for factor analysis solution of 7 factors. To test the internal reliability of each factor Cronbach's alphas were computed. In addition corrected item-total average correlations were calculated for all culture subscales.

Table 1 shows internal consistency and corrected item-total average correlation for the subscales of organizational culture. For the majority of the scales (1-7), internal reliability is acceptable ($\alpha > .70$). Scale *(3): Emotional involvement* and *(7): Communication with superiors*, are below the accepted Cronbach's alpha of .70 (Nunnally & Bernstein, 1994). According to Schmitt (1996), alpha levels as low as .40 might still be meaningful. Also, the scales with lower alpha level consist of 2-5 items, which have been found to affect the reliability analysis negatively (Cortina, 1993). In addition, the average corrected item-total correlations of all these scales are of satisfactory level (higher than .30). This indicates acceptable internal consistency.

*Table 1*: Cronbach's alpha and item average total correlation for organizational culture

| Subscale | Number of items | α | Item average total correlation |
|---|---|---|---|
| 1. Openness towards co-workers | 4 | .714 | .50 |
| 2. Working with the opposite gender | 2 | .709 | .55 |
| 3. Emotional involvement | 2 | .683 | .52 |
| 4. Social grouping | 2 | .770 | .63 |
| 5. Social support and feedback | 8 | .840 | .58 |
| 6. Trust in superiors | 4 | .748 | .55 |
| 7. Communication with superiors | 5 | .544 | .31 |

In order to establish discriminant validity the intercorrelations between the subscales are examined and depicted in Table 2. It is expected for the subscales to be positively correlated, although not too highly, if they really are measuring different latent variables. The correlations between the subscales are in general weak to moderate which gives satisfactory discriminant validity.

*Table 2:* Intercorrelations between culture subscales

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Openness towards co-workers | 1 | | | | | | |
| 2. Working with the opposite gender | .16* | 1 | | | | | |
| 3. Emotional involvement | .17* | .29** | 1 | | | | |
| 4. Social grouping | .44** | .35** | .29** | 1 | | | |
| 5. Social support and feedback | .34** | -.04 | .11 | .18** | 1 | | |
| 6. Trust in superiors | .24** | .05 | .09 | .31** | .51** | 1 | |
| 7. Communication with superiors | .31** | .32** | .30** | .46** | .42** | .37** | 1 |

$n = 214-215$

*p $< .05$, **p $< .01$

Examining differences between nationalities and differences between superiors and subordinates, a multivariate analysis of variance (MANOVA) was performed (H1, H2). MANOVA gives overall tests of the effects of dimensions. This may serve to ensure against inflation in the probability of Type 1 errors as the account the association amongst the criterion variables. MANOVA also makes it possible to estimate discriminate functions that can be interpreted as latent variables tapped for the individual scales. In order to obtain discriminant validity each variable were set as independent variables in two different analyses. The dependent variables in each case were the seven subscales from the cultural dimension. Power analysis of Cohen's *d* was conducted. According to Cohen (1969) d= .20 indicates a small effect size, d= .50 a medium effect size and d= .80 a large effect size. The effect size tells something about the strength of the relationship between variables in a statistical population (Field, 2009). If the *d* value turns out to be .8 or more it indicates sufficient power to detect any effects that might have existed. If the value is less, it might

indicate a necessity to replicate the research using more participants to increase the power. Cohen (1969) suggests that the maximum acceptable probability of a type 2 error would be at the level of .2.

## Results

*Table 3*: MANOVA with nationality as independent variable

| | Norwegian (1) | Filipino (2) | Total | | |
|---|---|---|---|---|---|
| | Mean (SD) | Mean (SD) | Mean (SD) | F | d |
| 1. Openness towards co-workers | 3.79 (.35) | 3.90 (.41) | 3.87 (.40) | 3.58 | -.29 |
| 2. Working with the opposite gender | 4.12 (.63) | 3.60 (.74) | 3.74 (.75) | 9.18** | .76 |
| 3. Emotional involvement | 3.73 (.62) | 3.26 (.71) | 3.39 (.72) | 3.51 | .71 |
| 4. Social grouping | 4.26 (.71) | 4.00 (.67) | 4.07 (.68) | 2.53 | .38 |
| 5. Social support and feedback | 3.37 (.51) | 3.83 (.43) | 3.71 (.50) | 23.50*** | - .98 |
| 6. Trust in superiors | 3.86 (.52) | 3.93 (.49) | 3.91 (.50) | 1.06 | -.14 |
| 7. Communication with superiors | 3.56(.46) | 3.48 (.56) | 3.50 (.54) | .36 | .16 |
| N | 39 | 104 | 143 | | |

Wilks' Lambda = .72, $p < .001$;  $* p < .05$ ; $** p < .01$ ; $*** p < .001$;

Table 3 shows the results of examining cross-country differences (H1) in culture perception, after a multivariate analysis of variance (MANOVA) was performed. It is important to note that the variables Ship type and Superior/Subordinate were the covariates in this test while the variable nationality was the independent variables. The seven subscale variables were the dependent variables. An overall significant difference is found for the seven culture scales for nationality (Wilks' Lambda = .72, $p < .001$). The results may indicate that people from different nationalities differ when it comes to organizational culture. A significant difference of nation on *(2): Working with the opposite gender* ($F = 9.18$, $p < .01$) and on *(5): Social Support and feedback given by superiors* ($F = 23.50$, $p < .001$) emerges. Thus H1 is partially supported. On the 5-point Likert scale a high score indicated a positive attitude about working with the opposite gender and a low score indicated a negative attitude about working with the

opposite gender. According to the results Norwegian seafarers score more positive when asked about working with the opposite gender (4, 12) while Filipino seafarers score lower (3, 60). When it comes to perceived social support and feedback from superiors Norwegian seafarers score lower (3, 37) while Filipino seafarers score higher (3, 83) indicating a greater perceived support from superiors amongst Filipino seafarers than from Norwegian seafarers. The effect- sizes are medium on working with the opposite gender ($d = .76$) and high on Social support and feedback ($d = .98$). The subscales 1 and 4 though show a small effect-size ($d = .29$; $d = .38$) and the variable 3 shows a medium effect-size ($d = 71$) even though the effect is found to be significant. This may be an indication of a low sample size (n = 143) which means that a larger sample may be needed to obtain significant results.

*Table 4*: MANOVA with superior/subordinate as independent variable

| | Officer/Manager | Rating/Subordinate | Total | | |
| --- | --- | --- | --- | --- | --- |
| | Mean (SD) | Mean (SD) | Mean (SD) | F | d |
| 1. Openness towards co-workers | 3.87 (.38) | 3.88 (.38) | 3.87 (.38) | .08 | - .03 |
| 2. Working with the opposite gender | 3.76 (.78) | 3.68 (.69) | 3.73 (.74) | .01 | .11 |
| 3. Emotional involvement | 3.60 (.70) | 3.23 (.69) | 3.43 (.72) | 8.93** | .53 |
| 4. Social grouping | 4.19 (.64) | 4.01 (.69) | 4.11 (.67) | 1.76 | .27 |
| 5. Social support and feedback | 3.61 (.49) | 3.77 (.48) | 3.69 (.49) | 1.28 | - .33 |
| 6. Trust in superiors | 3.89 (.41) | 3.90 (.54) | 3.89 (.47) | .003 | - .02 |
| 7. Communication with superiors | 3.61(.46) | 3.42 (.58) | 3.52 (.53) | 4.31 | .36 |
| N | 88 | 76 | 164 | | |

Wilks' Lambda = .88, $p < .01$;  * $p < .05$; ** $p < .01$ ; *** $p < .001$;

Table 4 shows MANOVA performed in order to examine superior/subordinate differences (H2). In this case nationality and ship type were the covariates while superior/subordinate was the independent variable. The seven subscale variables were the dependent variables. An overall significant difference is found for the seven culture scales for superior/subordinate (Wilks' Lambda = .88, $p < .01$). The significant difference indicates that organizational culture is being shaped by differences between superiors and subordinates. A significant effect of superior/subordinate on *(3): Emotional involvement* ($F = 8.93$, $p < .01$) emerges.

According to the results seafarers in higher positions (officers/ managers) score higher (3, 60) on emotional involvement in co-workers problems than seafarers in lower positions as ratings/subordinates (3, 23). This may indicate that officers/managers show greater concern about co-workers problems with work of family than ratings/subordinates do. Thus H2 was partially supported. The effect- size on *(3): Emotional involvement* is medium ($d = .53$). The subscales 4, 5 and 7 show a small effect-size ($d = .27$; $d = -.33$ and $d = .36$) even though the effects are not found to be significant. This may as well be an indication of low sample size (n = 164) which means that a larger sample may be needed in order to obtain significant results.

*Table 5*: MANOVA with ship type as independent variable

| | Industrial | Passenger/Cruise | Total | | |
| --- | --- | --- | --- | --- | --- |
| | Mean (SD) | Mean (SD) | Mean (SD) | F | d |
| 1. Openness towards co-workers | 3.87 (.38) | 3.89 (.40) | 3.87 (.38) | 1.38 | - .05 |
| 2. Working with the opposite gender | 3.68 (.72) | 4.05(.78) | 3.73 (.74) | .01 | -.49 |
| 3. Emotional involvement | 3.38 (.72) | 3.75 (.57) | 3.43 (.72) | 1.30 | -.57 |
| 4. Social grouping | 4.10 (.66) | 4.18 (.71) | 4.11 (.67) | .05 | -.12 |
| 5. Social support and feedback | 3.71 (.46) | 3.51(.64) | 3.69 (.49) | .71 | -.36 |
| 6. Trust in superiors | 3.89 (.44) | 3.91(.68) | 3.89 (.47) | .28 | -.03 |
| 7. Communication with superiors | 3.53(.52) | 3.44 (.55) | 3.52 (.53) | .67 | .17 |
| N | 144 | 20 | 164 | | |

Wilks' Lambda = .96, $p > .05$; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$;

In order to examine whether there are ship type differences (H3), a MANOVA was performed again and is depicted in Table 5. The covariates in this test were the variables nationality and superior/subordinate while ship type was the independent variable. The dependent variables were as in the previous two tables the seven culture scales. In contrast to the previous two MANOVA analyses, there is not found an overall significant difference for the seven culture scales for ship type (Wilks' Lambda = .96, $p > .05$). This result may indicate that people working on the two different ship types do not differ in organizational culture. On the other hand the effect-size on *(2): Working with the opposite gender* and *(3): Emotional involvement* show a medium effect ($d = -.49$ and $d = - .57$) and the effect-size on the variable *(5): Social*

*support and feedback* shows a small effect ($d$ = -.36). Even though there is no overall significant difference between ship types the value of Cohen's $d$ may indicate that this could have turned out differently given a larger sample size. The distribution of respondents between the two ship types is also quite uneven (Industrial N = 144 and Cruise N = 20) and is something that can be considered further on in the discussion. A larger and more even distributed sample size may have contributed to a significant result.

*Table 6:* Overall differences and interactions (Wilks' Lambda)

|  | Wilks' $\lambda$ |
| --- | --- |
| 1. Nationality | .81*** |
| 2. Superior/Subordinate | .96 |
| 3. Ships type | .92 |
| 4. Nationality * Superior/Subordinate | .93 |
| 5. Nationality * Ships type | .92 |
| 6. Superior/Subordinate* Ships type | .98 |
| 7. Nationality *Superior/Subordinate * Ships type | .91 |

* p < .05 ; ** p < .01 ; *** p < .001

Table 6 shows the overall interaction effects between the independent variables. In this test the covariates used were age and education, hence the different Wilks' Lambda results than in the earlier presented tables. No interaction effects are found between the independent variables in this study.

## Discussion

The initial aim of this article was to develop a suitable tool for the purpose of measuring organizational culture on board ships. By examining the psychometrical qualities of the culture dimension, the results reveal an instrument which shows sufficient reliability and validity. Though, it is important to note that this was a pilot study, and there still is room for improvement of the tool. Especially the seventh factor that concerns communication with

superiors did have a low Cronbach's alpha of .54 and gives indication for the need of improvement of this component.

The three expectations made further on stated that there will be significant differences in organizational culture between two nationalities, that there also will be significant results in the differences between superiors and subordinates (hierarchical position) and that the two ship types from industry and cruise will show differences in organizational culture as well. The results show that the first expectation is supported. There were significant differences between Norwegian and Filipino seafarers in overall organizational culture ($p < .001$). Especially the factors *(2) Working with the opposite* gender and *(5) Social support and feedback given by superiors* were highly significant ($p < .01$, $p < .001$). The significant results may indicate that Norwegian seafarers feel more comfortable in a work environment consisting of both women and men than Filipino seafarers do. When it comes to perceived social support and feedback from superiors, Filipinos scored higher which may indicate a greater satisfaction with their superiors when it comes to feedback and support. The superior/subordinate expectation was supported as well in showing significant differences in overall organizational culture ($p < .01$). The variable *(3) Emotional involvement* showed a strong significant result. This result may indicate that officers/managers do show a greater emotional involvement in co-workers problems rather than ignoring them. Subordinates (Ratings) on the other hand scored lower and thereby show lower involvement in their co-workers problems related to work and family. When it comes to the third expectation that there will be significant differences between ship types in organizational culture, the expectation was not supported. No significant organizational culture differences in ship types were found.

As earlier mentioned, there is a lack of organizational culture studies within the maritime shipping industry and accordingly the results will be discussed in a general matter. Studies conducted from other organizational areas as well as the studies linked to safety on board ship will as well be used in the discussion since safety culture in this matter can be seen as a part of the overall organizational culture.

*Nationality differences in organizational culture*

Nationality showed the strongest significant difference in organizational culture when it comes to the ship seen as an organizational unit. This indicates that nationality, in this study the Norwegian and the Filipino nationality may be a key influence in differences of organizational culture. The result is supported by the studies of Hofstede (1980, 1983 & 2001). Hofstede argued that people from different nationalities do bring their own value systems and beliefs into the organization. According to Hofstede people are "mentally programmed" through earlier experiences from childhood and from other country specific factors that contribute to the shaping of values and beliefs. Helmreich and Merritt (1998) showed as well the importance of nationality in organizations and how a conflict between national culture and organizational culture can lead to undesirable outcomes as stress and safety violations. In the same way as Håvold (2000) emphasizes the importance of nationality in his study of national culture on safety factors, where nationality can be seen as a factor that can influence the overall organizational culture on board a ship. The significant differences found in this study between Norwegian and Filipino seafarers might give an indication about the way organizational culture is shaped and influenced. Seafarers from Norway and the Philippines have their distinctive cultural background that can interfere with the culture the ship as an organization forms. The acknowledgement of strong subcultures on a ship which may derive from the national background of the seafarers may lead to a better understanding of the factors contributing to organizational culture variations. Taking the concept of subcultures and applying it to the shipping industry may be a useful way of uncovering the key elements that shape organizational culture.

*Superior/subordinate differences in organizational culture*

Superior/Subordinate differences were found to be significant in this study. An overall significance indicates that there are differences in how the organizational culture is perceived between Superiors and subordinates. As earlier mentioned, the differences seemed most substantial when it comes to the emotional involvement in co-workers problems. Officers/managers expressed a greater emotional involvement in co-workers work and family related problems than subordinates/ ratings did. Hofstede (1998) documented the existence of professional subculture, administrative subculture and "customer interface" subculture in a

study of a Danish insurance company. Even though this research was not conducted in shipping and thereby cannot be discussed in the same manner, it gives clear indications that people who take up different hierarchical positions in an organization may create their own culture in sense of values and norms in each hierarchical working group. Schein (2004) emphasized that hierarchical level can lead to the creation of subcultures in his studies as well. He argued that daily interaction with members of the same work group may provide an opportunity for the formation of common assumptions. Studying superiors and subordinates, there were indications for differences in overall organizational culture. The differences between the two groups were as earlier mentioned especially significant in relation to the third factor (3) *Emotional involvement*. It can be discussed whether superiors or subordinates execute a greater emotional involvement when interacting with each other. Most likely superiors feel the need to be leaders and try to support their co-workers in every way possible. Subordinates may not feel free to involve too much in each other's problems. This can be seen in connection to the hierarchical level of their position.

*Ship type differences in organizational culture*

There were no significant differences between the industrial and the cruise ships. According to these results the seafarers from the two ship types do not differ from each other when it comes to organizational culture. Even though the two companies were in the maritime business, they did operate in two very different areas. One major difference is the kind of goods they are transporting. While industrial ships often transport merchandise, cruise ships transport people. This alone should be a basis for two different organizational cultures. Even though the results were not significant, there were high effect sizes on three of the factors. These strong effect sizes (Cohen's *d*) may indicate that these results could have turned out differently given a larger sample size. In addition the sample distribution of respondents was also quite uneven (Industrial n = 144, Cruise n = 24), something that as well can be seen as standing in the way of a more accurate testing and results.

Summed up, nationality occurs to be a key variable when studying organizational culture. This may indicate the importance of taking into consideration the national culture when studying organizational culture in the future. Different countries have their own values, norms, rituals and overall perception of the world that may influence how people see themselves and others. This perceptions do have the ability to effect the occupational groups,

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in this case seafarers, and thereby the culture that reigns within the work environment of seafarers workplace. In addition to nationality, hierarchical position may as well be an important influential variable when it comes to organizational culture on board ships. It can be seen as divided into two subcultures of superiors and subordinates and each subculture with an own culture consisting of norms and way of perceiving the world.

*Methodical challenges*

Some elements must be mentioned when it comes to methodical challenges. First of all, the sample size could have been bigger even though measures of sampling adequacy indicated that the data were appropriate for further tests.

The questionnaire in this study is also developed in English only. This may have lead to language issues as misunderstanding the meaning of questions. Though, shipping companies require good English skills when hiring seafarers and the presumption about the respondents understanding English was taken into consideration when developing the questionnaire items.

The psychometric properties of the questionnaire show some room for improvement. Two of the organizational culture-scales yielded a Cronbach's value of below the accepted .70 (Nunnally & Bernstein, 1994; Field, 2005). Still, the average corrected item-total correlations of the scales in question turned out to be of satisfactory level (higher than .30). This indicated acceptable internal consistency.

Another important challenge is the issue of generalization. This study can only be representative for seafarers from Norwegian shipping companies and cannot be generalized to the whole seafarer population. The same has to be considered when looking at the gender distribution and the distribution of respondents from industrial ships and from cruise ships. Only three respondents from the total of N=215 were female. This indicates that the results in this study can be representative for male seafarers only. Also, 88, 1 % of the respondents were from the industrial ships while only 11, 9 % reported from cruise ships.

Social desirability is often linked to questionnaire responses. This phenomenon has to be considered for this study as well.

Last, but not least, the issue of term clarification has to be considered. In this thesis, nationality differences cannot be seen as the same as cultural differences. The term nationality

is only used in order to differentiate between Norwegians and Filipinos as two groups, and does not say something about the cultural orientation of each group.

*Conclusion*

When keeping the limitations in mind, this study contributes to further understanding of the maritime industry and especially the organizational culture on board a ship. In this study the conclusion can mostly be related to the Industrial shipping business, since the response rate from the cruise business was rather small in comparison to the industrial response. The results indicate that organizational culture is a complicated construct that has many influential parts in shaping it. Future studies on organizational culture can benefit from recognizing subcultures as important influences on the overall organizational culture. Valid subcultures especially for multinational organizations as the shipping companies can be a work group with the same nationality, a work group consisting officers on board ships and the subordinates seen as a work group as a whole. A more complex research taking these factors into consideration will lead to more detailed and useful information that can be used in connection with improvement for the conditions of the seafarers as an occupational group as well as for the shipping companies they work for. Shipping companies may gain a deeper understanding for the human factor and acquire new strategies for developing more suitable routines for preventing accidents and safety breaches, as these are seen as some of the common challenges shipping companies are struggling with today.

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# 2<sup>nd</sup> Article of Master Thesis in Psychology:

Predictors of Job Satisfaction amongst Seafarers

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## Abstract

The aim of the study was to examine the dimensions stress and organizational culture as predictors of job satisfaction within the specific conditions of the occupation of seafarers. In addition the impact of Social support and feedback given by superiors on job satisfaction was examined. 215 Norwegian and Filipino seafarers with different ranks from 24 different ships participated in this study. 97 of the respondents reported to be Officers/Managers and 87 of the respondents Ratings/Subordinates. The response rate was 35, 5 % for the entire sample. Multiple hierarchical block regression analysis were performed and revealed both stress and organizational culture as significant predictors of overall job satisfaction. Especially relationships with co-workers and relationships with superiors emerged as predictive for job satisfaction as a part of organizational culture. As predicted the factor Social support and feedback given by superiors had great predictive power for job satisfaction. The results emphasize the importance of organizational culture and especially relationships between the employees on board a ship.

## Introduction

A central aspect of the work environment in every organization is the amount of perceived *job satisfaction* amongst employees. General Job satisfaction is a concept that reflects on how an employee perceives the work situation as a whole (Fischer & Sortland, 2001). Job satisfaction is an abstract notion that refers to general, superior assessment of the job situation. How this general assessment is reached and which conditions emerge to be of greater or lesser significance for the overall evaluation differs from person to person (Fischer & Sortland, 2001). Often this concept of job satisfaction is being linked to another important component of the work environment – occupational stress. Both empirical and meta-analytic studies have reported that a negative relationship exists between stress and job satisfaction (Koslowsky, 1998; Fischer & Gitelson, 1983; Miles & Petty, 1975). Recent discussions of occupational stress place greater emphasis on the social environment of work (Radmacher & Sheridan, 1995). Research has shown that job satisfaction and levels of stress co-varies with the employee's position in the organizational hierarchy. The quality of the interpersonal relationships at a workplace is also a very important component for the well-being at the particular workplace (Fischer & Sortland, 2001). The past decades have witnessed an explosion of research examining the potential of other stress reducing factors such as social support. Hundreds of studies have explored the connection between features of social relations on the one hand and mental and physical health on the other. Special attention has been paid to the assumption that social support from significant others is of major importance in coping with important life events, including divorce, pregnancy, chronic illness and unemployment, and that social support can counteract the negative consequences of such events upon health or well-being. Social support has also become a major issue in the occupational stress research in the early eighties (Buunk, 1990). By now, more than 100 studies have examined the stress-alleviating role of social support at work. Empirical findings have also emphasized the importance of social support from supervisors and coworkers (House, 1891).

The following study is concerned in getting a deeper understanding of the occupation of the seafarer and how job satisfaction, occupational stress and organizational factors are related to each other. It is of special interest to examine specific characteristics that are important for well-being of the employees on board a ship. As the occupation of the seafarers is seen as being a quite hazardous occupation, physical and psychological stress is assumed to play an important role when it comes to well-being and job satisfaction (Kristiansen, 2005). To this

author's knowledge there are no previous studies for the occupation of the seafarer linking the variables job satisfaction, occupational stress and organizational culture together. Research in general though shows the importance of recognizing these variables and gives an indication of the importance to look more closely at them within the shipping industry as well.

*Job satisfaction*

The most used research definition of *job satisfaction* is by Locke (1976), who defined it as "a pleasurable or positive emotional state resulting from appraisal of one's job or job experiences" (Locke, 1976, in Dunnette, p.1304). Implicit in Locke's definition is the importance of both affect, or feeling, and cognition, or thinking.

The concept of job satisfaction consists of the feelings and attitudes one has about one's job. It can be considered as the global feeling about the job, or as related constellation of attitudes about various aspects of the job (Riggio, 2009). There are two approaches to conceptualizing job satisfaction (Spector, 1997). The first is called the global approach, which considers overall job satisfaction. This approach is used when the overall bottom line attitude is of interest. The second approach is called the facet approach. For example, overall satisfaction may be composite of numerous factors as satisfaction with pay, the type of work itself, working conditions, the type of supervision, company policies and procedures, relations with co-workers, and opportunities for promotion and advancement. The facet approach considers each of these aspects individually, assuming that a particular worker might be quite satisfied with some facet, such as the amount of pay, but unsatisfied with others, such as the quality of supervision and the opportunities for promotion. This approach is used to find out which parts of the job would produce satisfaction or dissatisfaction. This can be very useful for organizations that wish to identify areas of dissatisfaction that they can improve. Sometimes the usage of both approaches can be considered to get a complete picture of employee job satisfaction (Riggio, 2009; Spector, 1997).

In their research with police officers, Violanti and Aron (1994) found that high levels of job satisfaction were associated with improved psychological well-being. The relationship between low levels of job satisfaction and increased turnover behaviors is consistently produced too (O'Leary-Kelly & Griffith, 1995; Brough & Frame, 2004). Of particular importance is also the relationship between turnover intentions and organizational variables,

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with considerable attention being applied to low job satisfaction and high psychological strain levels. Especially the concept of occupational stress is being linked to the concept of psychological strain.

<p align="center">*Occupational stress*</p>

*Stress* plays a role in many environments. It is a determinant of functioning, health or performance. The literature is replete with studies that have examined the various settings using different measures and assumptions for the relationships among the cause and effect variables. For example, the workplace, the home, social setting, vacations or leisure outings are all places where an individual confronts stressors that have meaningful consequences for the individual and their surroundings. Although those effects are, generally, assumed to be negative, the opposite can also be true. Indeed studies have shown that workers' productivity sometimes increases as a result of stress. Anthony, Perrewe and Kacmar (1993) wrote that " a moderate amount of stress can help to stimulate employees to work longer, harder, and better" ( Anthony, Perrewe, & Kacmar, 1993, p.527).

To understand occupational stress it is necessary to understand several concepts that are involved in the stress process (Spector, 2003). A job stressor is a condition or situation at work that requires an adaptive response on the part of the employee (Jex & Beehr, 1991). Being reprimanded, having too little time, and being told about the possibility of being fired are all examples of job stressors. A job strain is a potential aversive reaction by an employee to a stressor, such as anxiety, frustration, or physical symptom such as a headache (Jex & Beehr, 1991). Jex and Beehr categorize strains as: psychological reactions, physical reactions, behavioral reactions. Psychological reactions involve emotional responses, such as anxiety or frustration. Physical reactions include symptoms such as headaches or stomach distress and illnesses such as cancer. Behavioral reactions are responses to job stressors and include substance use, smoking, accidents, and counterproductive work behavior. Many aspects of the work environment can be stressful. Some are conditions that occur across most jobs, such as conflicts with co-workers or heavy workloads (Spector, 2003). Others are specific to particular occupations. Although there are many different conditions at work that might serve as job stressors, relatively few have been studied. Spector (2003) focused on some job stressors (conditions) that have been given significant research attention as possible causes of

employee strains, and that have been linked to at least some strains. Role ambiguity and role conflict, workload, social stressors, control, machine pacing are some of them he mentioned.

*Social stressors*

 Models of the occupational stress presume that job stressors lead to job strains. Koslowsky (1998) specifies occupational stressors as characteristics that overlap with personal, group and organizational stressors. Some stressors occurring according to Koslowsky (1998) are job demands. Other stressors are variables as role pressure, responsibility for people, work overload or underload and work monotony. Baron (1996) and his view of organizational conflicts and stressors considers the whole problem as one stemming largely from interpersonal factors related to individuals, their social relationships, and the way they think about each other. One stressor pointed out by Barnett and Marshall (1991) is relationships with supervisor. The quality of the relationship between the worker and their supervisor (for example, whether they like or respect each other) is discussed by Barnett and Marshall (1991). Their argument was that difficulty in the relationship between a supervisor and worker could lead to uncomfortable feelings and cause distress. Spector and Jex (1998) conducted a meta-analysis of 13 studies relating interpersonal conflict at work to job strains. They found that conflict related to physical strains of health symptoms and psychological strains of anxiety, depression, frustration, and job dissatisfaction at work. Dormann and Zapf (1999) conducted a longitudinal study in East Germany from 1990 to 1991, assessing a sample of workers before and after reunification of the country. They surveyed a sample of employees including scales of social stressors (conflict and poor relationships with co-workers and supervisors) and depressive symptoms (feeling sad and a sense of worthlessness). They found that social stressors were associated with depressive symptoms over time, suggesting that poor relations might lead to psychological strain. Both studies underscore the importance of social stressors.

*Models linking stress and strain together*

One of the most commonly cited approach in the field of stress and its effects on both psychological and physical health is the Karasek's Job Demand- Control (JDC) Model (Koslowsky, 1998).

Along with the Job Demand-Control-Support (JDCS) model (Johnson & Hall, 1988), the two models have dominated research on occupational stress in the last 20 years (Van der Doef & Maes, 1999). Briefly, the JDC model has been defined as an interaction between job demands (psychological stress involved in accomplishing the workload) and decision latitude (the employee's potential control and conduct over own task during the work day) (Koslowsky, 1998). The interaction of dimensions must be considered: job decision latitude and psychological demands. Strain is highest when job demands are high, and job latitude is low and lowest when the values are reversed.

In the 1980s a social dimension, social support, was added to the JCDC model, resulting in the Job Demand-Control-Support model (Johnson & Hall, 1988; Johnson, Hall, & Theorell, 1989). Johnson and Hall (1988) demonstrated that in environments characterized by high demands and low control, workers experience reduced levels if strain when social support was high. Johnson and Hall suggested that perceived social support influences the stress-strain relationship in a similar manner to the better-established moderating effect of job control. This moderating role of social support has received general endorsement amongst researchers (Brough & Pears, 2004).

*Social support as a moderator of stress*

There has been a growing interest in whether or not social support could reduce the adverse effects of job stress on negative affects and job satisfaction (House, 1981). The rapidly growing literature on social support over the past two decades strongly suggests that social support can have a direct impact on psychological well being. It has also been shown that social support can buffer the negative effects of stress (Cheuk, Wong, & Rosen, 1994; Solomon, Waysman, & Mikulincer, 1990).

Social support is defined by Etzion (1984) as an informal social network that provides individuals with expressions of emotional concern or empathy, practical assistance, informational support or appraisal (i.e. various types of social support). (Brough & Pears, 2004; Etzion, 1984) Workplace social support focuses on collaborative problem solving and sharing information, reappraising situations and obtaining advice from a variety of personnel such as colleagues, supervisors and managers (i.e. sources of social support). Though different sources of support have only recently been specifically tested (Brough & Kelling,

2002; Voydanoff, 2002). There have been reports that supervisor support is negatively associated with turnover: i.e. low levels of supervisor support are related to higher turnover intentions (Eisenberger, et al., 2002). Direct associations have also been identified between social support and job satisfaction, absenteeism, and turnover (Perrewe & Carlson, 2002; Viswesvaran, Sanchez, & Fisher, 1999).

Brough and Frame (2004) predicted in their study that sources of social support will have favorable associations resulting in high levels of job satisfaction and low levels of turnover intentions. In the study supervisor support produced strong associations with job satisfaction and turnover intentions, supporting the hypothesis. The importance of adequate supervisor support for a number of organizational and individual outcomes has been recently recognized and research including specific measures of this source of workplace support is emerging. Colleague social support was associated as expected with both job satisfaction and turnover intentions variables, but these relationships were weaker as compared to the same associations with supervisor support. Furthermore, colleague support was not a direct significant predictor of either criterion. No associations were indentified between family social support and either job satisfaction or turnover intentions (Brough & Frame, 2004).

Other studies have also connected the supervisor social support in particular, with decreasing negative consequences of occupational stress across a variety of job contexts. For example, Schirmer and Lopez (2001) investigated the effects of supervisor support on occupational stress in a sample of 250 US university employees. Their results indicated that the perception of support from supervisors significantly reduced reported levels of psychological strain. Similarly, Bliese and Castro's (2000) examination of psychological strain in 1,538 US Army soldiers demonstrated that role clarity and decision latitude (i.e. job control) were only beneficial in buffering the effects of psychological strain in conditions where soldiers reported high levels of supervisor support.

These previous studies suggest that social support might be an important predictor of job satisfaction when it comes to the shipping industry as well as for other occupations. The studies also emphasize the importance of considering occupational stress as a predictor and social factors such as social support. The lack of previous studies linking these three factors to the ship as an organization, demand a more general discussion when it comes to the following study. At the same time, the lack of studies within the area of shipping emphasizes the need of a greater focus on this occupational area.

*Aims of the study*

The aim of this study is to examine predictors for seafarer's job satisfaction on board ships in general for both industrial ship types and for cruise ship types. Especially stress factors and the culture factor (5) Social support given by superiors are of interest. Hence, the predictors in this study will be the seven variables constituting culture and the six variables which constitute stress. According to earlier mentioned theories these expectations are made:

H1 Stress factors will be predictive of job satisfaction

H2 Organizational culture will have factors that are predictive for job satisfaction

H3 Social support as part of the organizational culture, will be one of the strongest predictors of job satisfaction

**Method**

*Sample*

Data was obtained from 24 ships from two Norwegian shipping companies. 215 respondents from both companies did participate in the study. 88, 1 % of the respondents came from the Industrial shipping company and 11, 9% from Passenger/Cruise. The sample consists mainly of male respondents (n= 212). The majority of the respondents were Filipino (63, 3 %), Norwegian (21, 4%) and Indian (11, 6%). For distinction between hierarchical positions seafarers were divided into two groups of Officer/Manager (n = 97) and Rating/Subordinate (n = 87). 14, 4 % of the respondents did not report their position and is thereby missing. There was an even age distribution where the majority of the respondents stated to be in the age group "25-29" (20, 5 %). 14 % stated to be 30-34 and 11, 6% were between 35 and 39 years old. 68,89 % of the respondents stated to be Married/Have a living partner and 28,8 % stated to be single. The remaining 2, 3% were divorced. Most of the respondents had a College/University education (68, 8 %). 15, 8% marked general education as Vocational School; 6, 5 % had a High School education and 7, 4 % had a basic education.

*Procedure*

In collaboration with Det Norske Veritas (DNV) various shipping companies were contacted and recruited for this study. The aim was to develop a reliable questionnaire tool specific designed for the shipping environment and its employees. As a reliability measure before shaping the questionnaire, 20 semi-structured qualitative expert and- employee interviews were carried out. Eight of the interviews were with people by the time working in the shipping industry and some who had background as being employed earlier. The additional 12 interviews were conducted with employees on board to ships. Six interviews were carried out with employees on an industrial ship and the other six interviews with employees from Passenger/Cruise ship. The participants had various positions ranging from a leadership position to a rating position. These interviews were used as a starting point for the development of the questionnaire used in this study. In addition a literature review of existing questionnaires measuring work environment factors was conducted.

*Questionnaire*

The questionnaire was developed in Microsoft Excel. Since all seafarers had to take the questionnaire while out at sea, sending out the questionnaire by e-mail was the most convenient way. The purpose of the study was explained to the respondents. The total questionnaire consisted of 94 questionnaire items (See appendix 1). All the items could be answered on a 5-point Likert scale. The questionnaire took about 30 minutes to complete and was sent back by e-mail by the ship captain. The questionnaires were treated confidentially and thereby no one in specific could be linked to one particular questionnaire.

The different parts of questionnaire had the following titles: "My Company's safety and goals", "My working conditions", "My relations", "My superiors and the shipping company", "Job stress", "My job satisfaction" and "About myself". Further on after all respondents had returned the questionnaires, a factorial analysis was conducted and several factors emerged that can be seen as important for the work environment on board a ship. The dimensions which emerged were: *Job satisfaction*, *Stress*, *Working conditions*, *Goals*, *Organizational culture* and *Safety* (Lang, 2011a). In this article the three dimensions Job satisfaction, Stress and Organizational culture are being used in the analysis. The structure of the dimension Organizational culture did contain seven factors: *(1) Openness towards co-workers, (2) Working with the opposite gender, (3) Emotional involvement, (4) Social grouping, (5) Social*

*support and feedback from superiors, (6) Trust in superiors* and *(7) Communication with superiors*. The seven factors can be sees as measuring two types of relationships on board a ship: *Relationships with co-workers (1-4)* and *Relationships with superiors (5-7)*. Detailed explanation of the seven factors and psychometric quality is presented in Article 1 in this thesis. This article explains in particular the structure of the two dimensions Job satisfaction and Stress.

Within the dimension of Job Satisfaction the following factors emerged: *(1) Task Satisfaction:* Measures development and use of own competence, respect others have for the work and possibility of variation in tasks given; (*2) Rewards and Benefits*: Measures satisfaction with salary, chances of promotion, further education and other benefits; *(3) Co-workers:* Measures satisfaction with communication and treatment with and by co-workers, and their level of competence; *(4) Meaningfulness*: Measures the perception and meaning in doing tasks, satisfaction with having to do the work of others, and which degree one perceives rules and regulations as meaningful; (*5) Feeling of safety*: The factor measures the perception of job security and reliance on co–workers handling of a crisis; *(6) Balance of workload and available time:* Measures satisfaction with deadlines, amount of paperwork and quality of sleep.

The dimension of *Stress* contained these factors: *(1) Responsibility and decisions:* The perceived burden of responsibility and the perceived pressure of making decisions; *(2) Physical nuisance:* Perceived stress of unusual temperature exposure, perceived stress as a result of vibrations and noise from the ship; (*3) Liability*: Amount of perceived stress that may results by concerning about injuring co-workers and causing financial loss for the company; *(4) Work strain and time pressure*: Perceived strain by amount of work pace, interruptions and unusual operating hours; *(5) Isolation:* Perceived strain by feeling isolated or having lack of contact with family and friends, perceived stress in connection with lack of information about the world outside the ship; *(6) Variation*: Perceived stress by lack of variation in the work.

*Statistical analysis*

In order to reveal factors included in the dimensions of job satisfaction and stress an exploratory factor analysis was conducted. Principal component analysis with direct oblimin rotation was carried out. Bartlett's test of Sphericity was found to be significant and Kaiser-

Mayer – Olkin (KMO) measure of sampling adequacy indicated that the data were appropriate for factor analysis solution of 6 factors for both dimensions. Cronbach's alphas were computed in order to test the internal reliability of each factor. In addition corrected item-total average correlations were calculated for all subscales in each dimension

The internal consistency and reliability of the Job Satisfaction dimension is depicted in table 1. The internal reliability was acceptable for three of the six job satisfaction scales ($\alpha > .70$). Scale *(4): Meaningfulness*, Scale *(5): Feeling of Safety* and Scale *(6): Balance of workload and available time* were below the accepted Cronbach's alpha of .70 (Nunnally & Bernstein, 1994). Though, according to Schmitt (1996), alpha levels as low as .40 might still be meaningful. In addition all the three scales consist of only 2-3 items, which according to Cortina (1993) was found to affect the reliability analysis negatively. The average corrected item-total correlations of all scales were of satisfactory level, which is higher than .30. This indicates acceptable internal consistency.

Table 2 shows the internal consistency and reliability of the stress dimension. Five of the six scales had an acceptable internal reliability ($\alpha > .70$). The last scale *(6): Variation* consisted of only one item and had thereby no indication of Cronbach's alpha or an intern average total correlation. The average corrected item-total correlations for the other five scales were all of satisfactory level.

*Table 1*: Internal consistency and reliability of the Job Satisfaction dimension

| Subscale correlation | Number of items | α | Item average total |
|---|---|---|---|
| 1. Task | 4 | .840 | .67 |
| 2. Rewards and Benefits | 5 | .827 | .63 |
| 3. Co - workers | 4 | .871 | .73 |
| 4. Meaningfulness | 3 | .696 | .51 |
| 5. Feeling of Safety | 2 | .501 | .34 |
| 6. Balance of Workload and Available Time | 3 | .573 | .39 |

*Table 2*: Internal consistency and reliability of the Stress dimension

| Subscale correlation | Number of items | α | Item average total |
|---|---|---|---|
| 1. Responsibility and Decisions | 4 | .810 | .63 |
| 2. Physical Nuisance | 3 | .841 | .71 |
| 3. Liability | 2 | .919 | .85 |
| 4. Work Strain and Time Pressure | 4 | .815 | .64 |
| 5. Isolation | 2 | .797 | .66 |
| 6. Variation | 1 | - | |

In order to establish discriminant validity the intercorrelations between the subscales for job satisfaction and stress are examined and depicted in Table 3 and Table 4. In order to have valid factors the subscales are expected to be positively correlated, although not too highly in order to really be measuring different latent variables. The correlations between the subscales for both dimensions were in general weak to moderate which gives satisfactory discriminant validity.

*Table 3*: Intercorrelations between job satisfaction subscales

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Task | 1 | | | | | |
| 2. Rewards and benefits | .39** | 1 | | | | |
| 3. Co – workers | .53** | .41** | 1 | | | |
| 4. Meaningfulness | .26** | .40** | .34** | 1 | | |
| 5. Feeling of safety | .01 | -.12* | - .02 | - .12 | 1 | |
| 6. Balance of workload and available time | .38** | .48** | .35** | .42** | - .09 | 1 |

*n* = 209- 215; *\*p* <.05, *\*\*p* < .01

*Table 4*: Intercorrelations between stress subscales

|  | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Responsibility and decisions | 1 | | | | | |
| 2. Physical nuisance | .38** | 1 | | | | |
| 3. Liability | .22** | .22** | 1 | | | |
| 4. Work strain and time pressure | .47** | .29** | .33** | 1 | | |
| 5. Isolation | .32** | .35** | .15* | .24** | 1 | |
| 6. Variation | .21** | .16* | .01 | .23** | .09 | 1 |

*n* = 208- 211; *p <.05, **p < .01

To explore the predictors of job satisfaction (H4, H5 and H6) several hierarchical linear block regression analysis were performed with overall job satisfaction as the criterion variable and with each of the job satisfaction factors alone as the criterion variable. In the first block the six subscales of stress were inserted: *(1) Responsibility and decisions, (2) Physical nuisance, (3) Liability, (4) Work strain and time pressure, (5) Isolation* and *(6) Variation*. The second block consisted of the first four scales measuring relationships with co-workers in organizational culture: *(1) Openness towards co-workers, (2) Working with the opposite gender, (3) Emotional involvement* and *(4) Social grouping*. In the third block the remaining three organizational culture scales measuring relationships with superiors were inserted: *(5) Social support and feedback given by superiors, (6) Trust in superiors* and *(7) Communication with superiors*.

# Results

*Table 5*: Hierarchical Block regression analysis: Overall Job Satisfaction

| Predictors | Block 1 | Block 2 | Block 3 |
|---|---|---|---|
| | $\beta$ | $\beta$ | $\beta$ |
| Block 1: Stress | | | |
| (1) Responsibility and Decisions | .15 | .12 | .12 |
| (2) Physical Nuisance | .09 | .10 | .02 |
| (3) Liability | .11 | .11 | .09 |
| (4) Work strain and Time pressure | .17* | .12 | .09 |
| (5) Isolation | .07 | .05 | .05 |
| (6) Variation | .12 | .13 | .08 |
| Block 2: Relationships with co-workers | | | |
| (1) Openness towards co-workers | | .27*** | .13* |
| (2) Working with the opposite gender | | - .06 | .003 |
| (3) Emotional involvement | | - .04 | - .07 |
| (4) Social grouping | | .10 | .06 |
| Block 3: Relationships with superiors | | | |
| (5) Social support and feedback from superiors | | | .48*** |
| (6) Trust in superiors | | | - .05 |
| (7) Communication with superiors | | | .10 |
| | | | |
| R² | .19 | .29 | .49 |
| adj. R² | .17 | .25 | .45 |
| F change | 7.75*** | 6.24*** | 23.72*** |
| N | 197 | | |

$* \; p < .05; \; ** \; p < .01; \; *** \; p < .001;$

Table 5 shows the results of a hierarchical regression analysis with overall job satisfaction as the criterion variable. The first block consisted of the stress variables *(1) Responsibility and decisions, (2) Physical Nuisance, (3) Liability, (4) Work strain and time pressure, (5) Isolation* and *(6) Variation*. The results show that the six variables in the first block significantly explain variance in overall job satisfaction by 19, 7% (F change = 7,752, *p* <

.001). Adding the four dimensions of culture measuring relationships with co-workers: *(1)*
*Openness towards co-workers, (2) Working with the opposite gender, (3) Emotional*
*involvement* and *(4) Social grouping)*, the explained variance increases to 29, 2 % significant
explained variance (F change = 6,242, *p* < .001). When adding the remaining three culture
factors measuring relationships with superiors in the third block: (*5) Social support and*
*feedback given by superiors (6) Trust in superiors* and *(7) Communication with superiors*, 49
% of the variance of overall job satisfaction is explained (F change = 23,717, *p* < .001).
According to the results the components of both stress and organizational culture contribute to
the explained variance of overall job satisfaction. Supportive of H1 and H2 both stress factors
and organizational culture factors emerged as significant contributors to an increase in
explained variance of overall job satisfaction. Especially the variable *(5) Social support and*
*feedback given by superiors* had significant predictive power after all the blocks were added
($\beta$ = .48, *p* < .001) Supportive of H6, social support emerged as a significant contributor of
added explained variance in job satisfaction.
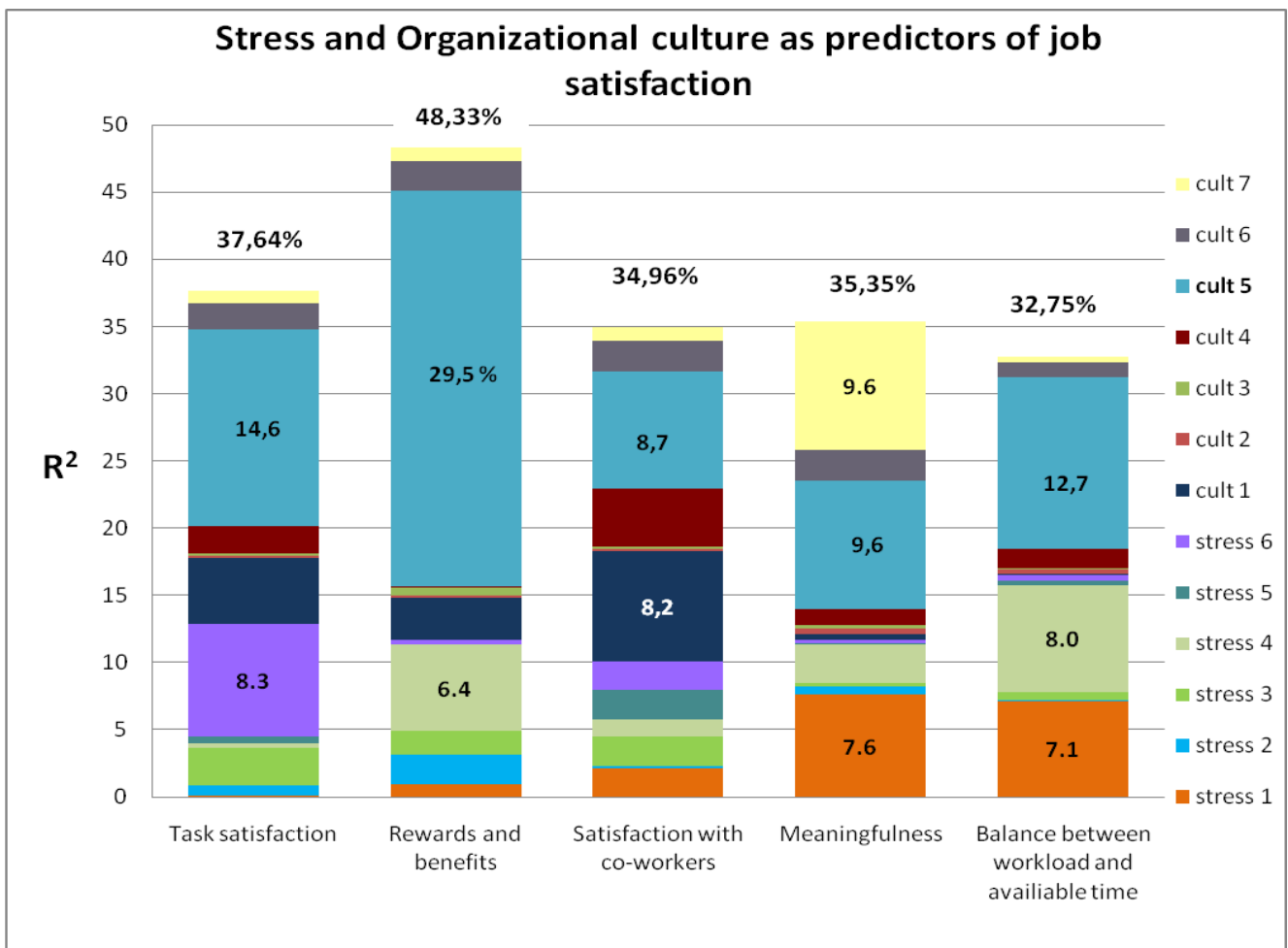


*Figure1*. Stress and organizational culture as predictors of general job satisfaction

Figure 1 shows the results of five hierarchical block regression analysis with five of the original six job satisfaction factors being the criterion variables in each analysis. The job satisfaction factor *Feeling of safety* was excluded from the figure since there was not found a significant result and the total explained variance of the independent variables was $R^2 = 5\%$ and thereby too small a number suited to be depicted in a figure. The first bar from the left in figure 1 depicts the explained variances in the job satisfaction factor *Task* satisfaction by each of the six stress factors and the seven organizational culture factors in the third block. The bar shows that the stress factor *(6) Variation* and the culture factor *(5) Social support and feedback given by superiors* have the greatest effect and thereby contribute with the most explained variance for Task satisfaction (8, 32% and 14, 62%). The overall explained variance by the stress and culture variables for task satisfaction is $R^2 = 37, 64$ %. The second bar from the left depicts the explained variance for the job satisfaction factor *Rewards and benefits.* In total, the independent stress and organizational culture variables explain 48, 33 % of the variance in *Rewards and benefits* ($R^2 = 48, 33$). Again it is the factor *(5) Social support and feedback given by superiors* that has the greatest effect by explaining 29, 47% of the variance in Rewards and benefits. The third bar shows explained variance on the job satisfaction factor *Satisfaction with co-workers*. *(1) Openness towards co-workers* and *(5) Social support and feedback given by superiors* are the two most predictive factors with 8, 2% and 8, 68% explained variance. In total all the factors included explain 34, 96% of the variance in Satisfaction with co-workers ($R^2 = 34, 96$). The fourth bar depicts explained variance for the job satisfaction factor *Meaningfulness*. *(5) Social support and feedback given by superiors* explain 9, 59% of the variance in Meaningfulness and *(7) Communication with superiors* explains 9, 57% of the variance in this factor. All the stress and culture variables in total explain 35, 35 % of the variance in Meaningfulness. The last bar in this figure shows explained variance for the job satisfaction factor Balance between workload and available time*. The stress factor *(1) Responsibility and decisions* explains 7, 14% of the variation in Balance between workload and available time. The other two factors which have the strongest predictive effect are the stress factor *(4) Work strain and time pressure* (7, 95 %) and the culture factor *(5) Social support and feedback given by superiors* (12, 7%). In total the stress and culture-factors explain 32, 75% of the variance in the factor Balance between workload and available time.

In all the five bars the stress variables and the culture variables explain in mean 35-40 % of the variance in the job satisfaction variables with the culture variable *(5) Social support and*

*feedback from superiors* being the one with most predictive power in every job satisfaction factor ranging 8, 68% – 29, 57% explained variance.

## Discussion

In addition to the main hypotheses (H1 – H3), the aim of this article was to examine the psychometric quality of the questionnaire specifically when it comes to the dimensions of job satisfaction and stress. When tested for reliability and validity both the job satisfaction and the stress factor showed acceptable results as it earlier did for the organizational culture scale in Article 1. This indicates that the questionnaire tool can be used in further research. At the same time it is important to note that the results obtained in this study were a part of a pilot study and that the questionnaire still can be improved after modifications made during the validating process.

Further on, the three hypotheses in this article stated that stress factors would be predictive of job satisfaction, that the organizational culture factors would predict job satisfaction and that the variable *(5) Social support and feedback given by superiors* would be amongst the strongest predictors of job satisfaction. The results from the hierarchical linear regression analysis for overall job satisfaction supported the hypothesis about the impact of stress and organizational culture variables and showed that after adding the seven organizational culture factors and the six stress factors in the analysis 49 % of the variance in overall job satisfaction is explained. These results exemplify the importance of both occupational stress and organizational culture when studying job satisfaction. Something else that emerged in this analysis was the rise in explained variance after the adding of the organizational culture factors, in specific the factors that measure relationship with superiors. This constituted the most explained variance after all the independent variables were added in the third block. In addition, the hypothesis about social support and feedback given by superiors being a strong predictor was also supported as the variable was found to have strong predictive effect on job satisfaction ($\beta = .48$, $p < .001$). This social support variable explained most of the variance in every single job satisfaction factor as well. The explained variance by (*5) Social support and feedback given by superiors* for each of the five job satisfaction factors ranged from 8, 68 % - 29, 47 %. These results indicate the importance of social support and feedback when measuring job satisfaction on board a ship.

*Stress factors as predictors of job satisfaction*

As predicted in the first hypothesis, stress seemed to be a significant predictor of job satisfaction. Adding stress alone to the regression analysis in the first block, overall job satisfaction was explained by 19, 7 % (F $_{change}$= 7,752, $p < .001$) by the six stress factors. From the six stress factors in this block the factor *(4) Work strain and time pressure* emerged as a strong single predictor ($\beta$= .17, $p < .05$). Work overload and underload are stressors mentioned by Koslowsky (1998). These kinds of stressors were job demands according to him. In their study Jex and Beehr (1991) noted that having too little time was an example of a job stressor which also could be linked to these findings. The stress variable *(4) Work strain and time pressure* measured perceived stress as a result of unusual working hours, which is often the case for seafarers. Shift work is the usual work pace on a ship and irregular sleeping and working hours are a major part of the occupation of a seafarer. According to the results this variable seemed to be the most predictive for job satisfaction when it comes to working on a ship when only stress factors were added as independent variables. Together with the other five stress variables, these findings indicate that a major part of what shapes job satisfaction may be the amount of perceived stress on board a ship. The occupation as a seafarer is in general known as being stressful and physically demanding (Kristiansen, 2005). The findings match these general known conditions and confirm the importance of recognizing stressors and trying to diminish them in order to increase job satisfaction for the occupation of the seafarer. Something else that occurred further on in the analysis is of great importance. After adding the first four organizational culture variables to block 2 and the remaining three variables to block 3, the effect of stress on job satisfaction seemed to lessen. The stress variable *(4) Work strain and time pressure* lost its significance in block 3 ($\beta$= .09, $p > .05$). These are interesting results that has to be discussed in connection with the specific traits of the occupation of a seafarer.

*Organizational culture factors as predictors of job satisfaction on board a ship*

As hypothesized, factors linked to organizational culture were predictive of job satisfaction as well as previous discussed for stress (H1, H2). The organizational culture factors in this study can be discusses as divided in two types of relationships: *Relationships with co-workers* and *Relationships with superiors*. In the second block of the regression analysis the four first organizational culture factors measuring relationships with co-workers were added. By adding

them to the six stress factors, explained variance increased to 29, 2 % (F change = 6,242, $p <$ .001). This indicates the importance of the relationships between co-workers as well as stressors when studying job satisfaction for employees working on a ship. The organizational culture factor which showed the highest significant predictive power in the second block was *(1) Openness towards co-workers* ($\beta = .27$, $p < .001$) and the same factor remained still significant in the third block even though less significant than in the second block ($\beta = .13$, $p < .05$). Seafarers work very closely with their co-workers and one of the biggest differences from working on land is how they live together as well as work together on ship 24 hours every day for often monthly periods of time. As such, seafaring may be seen as more than an occupation, rather a lifestyle. Both in studies of maritime accidents and work related problems on board it is often referred to the fact that the ship and its total crew functions as "24 hour community". Both work and free hours are spent on the ship (Kristiansen, 2005). This kind of closeness between crew members indicates the importance of the qualities of the relationships seafarers have with each other that again is important for overall well-being on board ship. Job satisfaction is influenced by this relationship and in this study *(1) Openness towards co-workers* seems to be a significantly important factor. This factor measures whether seafarers see each other as friends besides of co-workers, how they welcome new people to the ship and whether they receive and give feedback to each other when they do a good job. Baron (1996) considered interpersonal factors related to individuals as utterly important in organizations. He argued that social relationships and the way workers thought about each other were the foundations of organizational conflicts and stressors. In particular, relationships between worker and superior were being seen as important (Barnett and Marshall, 1991). By adding the remaining three organizational factors *(5) Social support and feedback given by superiors, (6) Trust in superiors* and *(7) Communication with superiors* to block 3, the explained variance increased to 49 % (F change = 23,717, $p < .001$). This indicates that relationship with superiors have great predictive strength when it comes to job satisfaction. The results show how having a positive organizational culture on board a ship, which is manifested in good interpersonal relationships between co-workers and their superiors, is predictive for a high job satisfaction when it comes to working on a ship. Especially the factor *(5) Social support and feedback given by superiors*, showed strong significant results in predicting overall job satisfaction ($\beta = .48$, $p < .001$). These results exemplify how stress does not occur as the greater predictor when it comes to job satisfaction as earlier studies have shown (Koslowsky, 1998). Some explanation for the significant predictive power of organizational culture in this study can be linked to the working conditions of a seafarer and in general this type of

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occupation. A ship is a moving work place and the people who work on it are a close community, almost a family, for several months at a time spending all day long together. This emphasizes the fact that relationships of the people working on ships are quite different than for people working on land. On a land job an employee goes home after he finishes work and does not have to spend the free time with co-workers. Seafarers don't have the choice of avoiding their co-workers and technically never really have time off since they always have to be on call in case some emergency occurs. Co-workers become one's family on board a ship and people often share problems with each other. This close relationship among seafarers illustrates the importance of good relationships for the well-being of seafarers. The high significance of the factor *(5) Social support and feedback given by superiors* also gives an indication how the relationships with superiors are very important for whether one is satisfied or not satisfied with the job.

### Social support as a strong predictor of job satisfaction

Earlier studies have already shown how social support can have a positive impact on job satisfaction and turnover (Etzion, 1984; Brough & Frame, 2004; Eisenberger, et al., 2002; Perrewe & Carlson, 2002). The hypothesis about social support being one of the strongest predictor for job satisfaction (H3) was supported in this study. The factor *(5) Social support and feedback given by superiors* showed the strong significant result in predicting overall job satisfaction ($\beta = .48$, $p < .001$). The factor measures perceived praise by superiors, whether superiors act on suggestions given by subordinates, and whether superiors give clear answers and deliver orders in satisfactory manner. It also measures whether superiors are perceived as good role models, make ratings feel appreciated and cared for, take comments and suggestions seriously. The fact that this factor had such a great predictive value, emphasizes the importance of the relationship between co-workers and superiors on board ships. There are already documented effects for other occupations. In their study, Brough and Frame (2004) found as well that supervisor support was associated with job satisfaction. Schirmer and Lopez (2001) found a connection between levels of supervisor support and reduced reported levels of psychological strain. Bliese and Castro (2000) had similar findings about the role of supervisor support. In this study, social support also emerged as significant predictor in the area of the shipping industry. It is important for seafarers to experience support from their superiors since they often don't have the possibility to experience support

from family and home when at sea. A superior can become a significant source of support which influences the well-being of the seafarers and increases job satisfaction. Figure 1 showed how this factor emerged as the one with greatest predictive power in almost every job satisfaction factor. Especially for the job satisfaction factor *(2) Rewards and Benefits* social support and feedback from superiors was a great predictor with 29, 9% explained variance. This can indicate that satisfaction with rewards and benefits is related to the amount of support and feedback a seafarer perceives from their superior. This can also indicate how salary and chances of promotion not necessarily are the greatest predictors of job satisfaction alone, but the value of support and feedback matters a great deal as well, and it can be seen as a reward itself to get a lot of support and feedback.

*Methodical challenges*

In this study the questionnaire was developed in English only. The most optimal approach would have been to translate the questionnaire into Filipino and Norwegian as well in order to ensure the understanding of the questionnaire items. There is though still the assumption about good English skills amongst seafarers as they are required to speak the language when hired by the shipping companies.

Social desirability responses should also be considered as they often occur when self-report measures are used. Respondents may be influenced by response bias in answering what seems most social desirable.

Something else that has to be mentioned is the fact that this study was a pilot study and it thereby has a great improvement potential. Three of the job satisfaction scales showed a Cronbach's alpha value below the acceptable .70 (Nunnally & Bernstein, 1994; Field, 2005). The average corrected item-total correlations though turned out to be satisfactory (higher than .30). These results show the need of a closer look at the psychometrical values of the questionnaire.

There are also some generalization issues. The results cannot be generalized to the whole seafarer population as the two shipping companies in this study were Norwegian. The results also cannot be seen as representative for both female and male seafarers as only three of the 215 respondents were female. The ship type is also an important to discuss. The respondents

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in this study were not evenly distributed as the larger part of them worked on industrial ships (88, 1%) as opposed to respondents from cruise ships (11, 9 %).

*Conclusion*

To sum up, the dimensions occupational stress and organizational culture were found to be predictive of job satisfaction on board ships. Especially social relationships amongst co-workers and relationships between co-worker and superiors emerged as having a strong predictive power for job satisfaction perception. Social support and feedback given by superiors was in this case one the strongest predictors.

These findings do suggest that social factors (as part of the organizational culture) do have quite a great influence on working conditions and the perception of job satisfaction on board ships. Earlier the well-being and the satisfaction of employees have mostly been discussed in connection with occupational stress. This study gives an indication about the importance of organizational culture and the importance of social relationships when studying the work environment as well. Social support from superiors and good relationships with co-workers in general can even be seen as more important predictors for the occupation of the seafarer as the work place is a moving vessel and the characteristics of the ship community is very different from the working characteristics of a land based job.

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**Appendix 1**

## Insight Work Environment Questionnaire

Det Norske Veritas (DNV), in cooperation with Norwegian University of Science and Technology (NTNU), is developing a new measurement tool with the aim of assessing the physical- and psychosocial working environment in shipping companies, onboard ships covering areas such as job satisfaction, job stress, working conditions and cooperation with co-workers, supervisors and the shipping company. The study is conducted by two master students at NTNU, under the guidance of Professor Torbjørn Rundmo, and will also be used as part of their master's degree project.

The participation in the study is voluntary, and by completing the questionnaire you give consents for the data you provide to be used in this study. It will take about 20-30 minutes to complete the questionnaire. Please note that there are no "right "and "wrong" answers. We want your true opinion, and your initial response is often the right one. We would like to emphasize that the information you provide will be treated confidentially and no individual answers will be given to the shipping company. The information will be used to create a picture of the general state of the working environment on board the ships, within the shipping company, and to validate the questionnaire.

The final version of this questionnaire will be much shorter. There are some repetitions or similar questions throughout the questionnaire. This is by purpose and important in the development of the measurement instrument. Your participation is important for us.

Thank you in advance for your cooperation and support! If you have any questions, feel free to contact us: Øyvind Teige Heidenstrøm (Phone: +47 901 99 778, Email: oyvinhei@stud.ntnu.no) or Marta Lang (Phone: +47 411 65 314, Email: martala@stud.ntnu.no).

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|---|---|---|
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Start questionnaire

## MY COMPANY'S SAFETY AND GOALS

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | stronlgy disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| Everyone onboard the ship is working to get the job done | ○ | ○ | ○ | ○ | ○ |
| I am always given reasonable deadlines | ○ | ○ | ○ | ○ | ○ |
| The shipping company puts our well - being ahead of profit | ○ | ○ | ○ | ○ | ○ |
| The shipping company won't give us equipment that would make work easier | ○ | ○ | ○ | ○ | ○ |
| The shipping company puts profit ahead of safety | ○ | ○ | ○ | ○ | ○ |
| We have to fight for every request we make to the shipping company | ○ | ○ | ○ | ○ | ○ |
| The shipping company only sees economy and numbers, and not the people | ○ | ○ | ○ | ○ | ○ |
| There are too few people working onboard my ship | ○ | ○ | ○ | ○ | ○ |
| I feel unnecessarily surveiled by superiors or the shipping company while on the ship | ○ | ○ | ○ | ○ | ○ |
| I do much paperwork that doesn't make sense, just to satisfy external authoritites (flag, port, etc.) | ○ | ○ | ○ | ○ | ○ |
| It seems like the external authorities don't know what it is like onboard a ship | ○ | ○ | ○ | ○ | ○ |
| If I have to give lower priority to request from other departments they always show understanding | ○ | ○ | ○ | ○ | ○ |
| Checklists don't always help me do my job safer | ○ | ○ | ○ | ○ | ○ |
| There is too much focus on safety | ○ | ○ | ○ | ○ | ○ |
| Risk assessment is sometimes unnecessary, even though it is required | ○ | ○ | ○ | ○ | ○ |
| Getting a permit to do a job is a waste of time | ○ | ○ | ○ | ○ | ○ |
| Checklists are sometimes unnecessary, because it is just common sense | ○ | ○ | ○ | ○ | ○ |
| I have access to all the personal protective equipment I need | ○ | ○ | ○ | ○ | ○ |
| The personal protective equipment is easily available | ○ | ○ | ○ | ○ | ○ |

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| Statement | | | | | |
|---|---|---|---|---|---|
| I am encouraged by my seniors to report any unsafe conditions I may observe | ○ | ○ | ○ | ○ | ○ |
| My suggestions about safety will be acted upon if I express them to management on shore | ○ | ○ | ○ | ○ | ○ |
| Seniors should delegate responsibilities to junior crews as parts of their training | ○ | ○ | ○ | ○ | ○ |
| Senior officers should encourage crewmember questions during normal operations and in emergencies on board | ○ | ○ | ○ | ○ | ○ |
| I am normally consulted on matters that affect the performance of my duties | ○ | ○ | ○ | ○ | ○ |
| Leaders make sure that relevant operational intentions and actions are understood | ○ | ○ | ○ | ○ | ○ |
| I am sure management will never compromise safety for profitability | ○ | ○ | ○ | ○ | ○ |
| My suggestions about safety will be acted upon if I express them to senior officers on board | ○ | ○ | ○ | ○ | ○ |
| My co-workers are adequately trained in emergency procedures | ○ | ○ | ○ | ○ | ○ |
| Emergency drills are conducted as prescribed | ○ | ○ | ○ | ○ | ○ |
| When I enter a new ship I always receive a proper hand-over | ○ | ○ | ○ | ○ | ○ |
| Our training has prepared the crew to work as a well-coordinated team in an emergency | ○ | ○ | ○ | ○ | ○ |
| Task assignments are always crosschecked and verified | ○ | ○ | ○ | ○ | ○ |
| Accidents and near-misses are always reported according to company orders | ○ | ○ | ○ | ○ | ○ |
| Senior ship's management ensures full cooperation between all onboard departments | ○ | ○ | ○ | ○ | ○ |

## MY WORKING CONDITIONS

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| I will always be allowed to return back home if something should happen with family | ○ | ○ | ○ | ○ | ○ |
| Everyone that feels the need for time off should get it, regardless of reason | ○ | ○ | ○ | ○ | ○ |
| The longer I stay onboard, the more comfortable I feel | ○ | ○ | ○ | ○ | ○ |

| | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| The length of my home period is ideal | ○ | ○ | ○ | ○ | ○ |
| I would prefer less salary if it would mean I could be more at home | ○ | ○ | ○ | ○ | ○ |
| My high salary is the only reason I continue in this job | ○ | ○ | ○ | ○ | ○ |
| I will quit my job if there is no chance for promotion to higher ranks | ○ | ○ | ○ | ○ | ○ |
| If I recieved another job offer on land I would quit immediately | ○ | ○ | ○ | ○ | ○ |
| If I had the opportunity to work in the offshore oil industry I would accept it | ○ | ○ | ○ | ○ | ○ |
| I have more important things to do than to have a shore leave when in port | ○ | ○ | ○ | ○ | ○ |
| I have great loyalty to the shipping company | ○ | ○ | ○ | ○ | ○ |
| The shipping company gets the loyalty it deserves from the employees | ○ | ○ | ○ | ○ | ○ |
| The need to support my family is the only reason I have this job | ○ | ○ | ○ | ○ | ○ |
| It is OK for me to extend the onboard sailing period or contract if the shipping company sees the need for it | ○ | ○ | ○ | ○ | ○ |

## MY RELATIONS

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | stronlgy disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| I never interfere with my co-workers areas of responsibility | ○ | ○ | ○ | ○ | ○ |
| I manage my duties without help from my co-workers | ○ | ○ | ○ | ○ | ○ |
| Problems often arise because men and women work together | ○ | ○ | ○ | ○ | ○ |
| I am not comfortable working with people of the opposite gender | ○ | ○ | ○ | ○ | ○ |
| I never ask co-workers about their job related problems | ○ | ○ | ○ | ○ | ○ |
| I never ask my co-workers about family related problems | ○ | ○ | ○ | ○ | ○ |
| I am not comfortable sharing my problems with my co-workers onboard | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| I always adapt my behavior to avoid confrontations onboard. | ○ | ○ | ○ | ○ | ○ |
| If someone should feel the need to talk about their problems, I always take the time to listen | ○ | ○ | ○ | ○ | ○ |
| The way we are used to do things on this ship should have priority before employee preferences | ○ | ○ | ○ | ○ | ○ |
| New employees have to adjust to our way of doing things | ○ | ○ | ○ | ○ | ○ |
| I like socializing with people from other religions | ○ | ○ | ○ | ○ | ○ |
| I find it difficult to go on sick leave leave because then someone else has to do my work | ○ | ○ | ○ | ○ | ○ |
| I only socialize with people from my own department | ○ | ○ | ○ | ○ | ○ |
| I don't like to socialize with people from other departments | ○ | ○ | ○ | ○ | ○ |
| I always welcome new persons in my department | ○ | ○ | ○ | ○ | ○ |
| When new people arrive in my department, problems always occur | ○ | ○ | ○ | ○ | ○ |
| I often need a break from my co-workers in my department | ○ | ○ | ○ | ○ | ○ |
| I regard my co-workers as friends | ○ | ○ | ○ | ○ | ○ |
| I feel that I have to be seriously ill in order to take a sick leave | ○ | ○ | ○ | ○ | ○ |
| I don't mind taking over the work for someone who is on sick leave | ○ | ○ | ○ | ○ | ○ |
| Critique towards someone in my department is critique towards all of us | ○ | ○ | ○ | ○ | ○ |
| I always tell people when they have done a good job | ○ | ○ | ○ | ○ | ○ |
| If I make a serious mistake I would be afraid to tell my superior | ○ | ○ | ○ | ○ | ○ |
| My co-workers do not tolerate that I make an error | ○ | ○ | ○ | ○ | ○ |
| I have serious problems understanding what my co-workers are saying due to language barriers. | ○ | ○ | ○ | ○ | ○ |
| Ship management prioritize profits ahead of safety | ○ | ○ | ○ | ○ | ○ |
| Ship management prioritize profits ahead of peoples well-being | ○ | ○ | ○ | ○ | ○ |

## MY SUPERIORS AND THE SHIPPING COMPANY

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | stronlgy disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| I feel appreciated by my direct superiors | ○ | ○ | ○ | ○ | ○ |
| My direct superiors are good role models | ○ | ○ | ○ | ○ | ○ |
| If I make a suggestion to my direct superiors, it is always taken seriously | ○ | ○ | ○ | ○ | ○ |
| My superiors always take action on suggestions from me and my co-workers | ○ | ○ | ○ | ○ | ○ |
| I am not comfortable going to my direct superiors with problems | ○ | ○ | ○ | ○ | ○ |
| My direct superiors are availiable when I need them | ○ | ○ | ○ | ○ | ○ |
| I feel that my direct superiors always take my comments and suggestions seriously | ○ | ○ | ○ | ○ | ○ |
| I am not satisfied with the feedback I get from my direct superiors | ○ | ○ | ○ | ○ | ○ |
| I am always told what I've done wrong | ○ | ○ | ○ | ○ | ○ |
| I am always told what I've done well | ○ | ○ | ○ | ○ | ○ |
| Sometimes it is necessary to stand up to my direct superiors in order to be respected | ○ | ○ | ○ | ○ | ○ |
| My direct superiors always give a clear answer, I never doubt where they stand | ○ | ○ | ○ | ○ | ○ |
| I feel the onboard authorities the ship are not respected | ○ | ○ | ○ | ○ | ○ |
| Onboard my ship, seniority is more important than rank | ○ | ○ | ○ | ○ | ○ |
| My nearest superior is strict rather than friendly | ○ | ○ | ○ | ○ | ○ |
| I have problems taking orders from people I don't know | ○ | ○ | ○ | ○ | ○ |
| I don't trust my direct superiors to take actions if needed | ○ | ○ | ○ | ○ | ○ |
| My direct superiors are not capable to see things from other's perspective | ○ | ○ | ○ | ○ | ○ |
| My nationality determines how I am treated by my direct superiors | ○ | ○ | ○ | ○ | ○ |

| | very unsatisfied | unsatisfied | neither satisfied nor unsatisfied | satisfied | very satisfied |
|---|:---:|:---:|:---:|:---:|:---:|
| I am comfortable asking my direct superiors if I don't understand what I am supposed to do | ○ | ○ | ○ | ○ | ○ |
| My direct superiors never comment on the work I do | ○ | ○ | ○ | ○ | ○ |
| My direct superiors seldom give positive feedback | ○ | ○ | ○ | ○ | ○ |
| I always socialize with people from my own rank off duties | ○ | ○ | ○ | ○ | ○ |
| I am very satisfied with the way I receive orders | ○ | ○ | ○ | ○ | ○ |
| The more information I receive from the shipping company, the more I worry | ○ | ○ | ○ | ○ | ○ |
| I feel cared for by my direct superiors | ○ | ○ | ○ | ○ | ○ |
| I like my direct superiors | ○ | ○ | ○ | ○ | ○ |
| My direct superiors give contradictory messages | ○ | ○ | ○ | ○ | ○ |
| My direct superiors are highly competent | ○ | ○ | ○ | ○ | ○ |
| I am given trust from my direct superiors | ○ | ○ | ○ | ○ | ○ |
| I am satisfied with the training given to me by the shipping company | ○ | ○ | ○ | ○ | ○ |
| I do not like it when the shipping company interferes with the way I do things onboard the ship | ○ | ○ | ○ | ○ | ○ |
| I feel that the company sometimes implements unnecessary changes in my duties and tasks | ○ | ○ | ○ | ○ | ○ |
| It feels like the shipping company doesn't know what it's like onboard the ship | ○ | ○ | ○ | ○ | ○ |
| The shipping company doesn't listen to what I say | ○ | ○ | ○ | ○ | ○ |
| It feels like the shipping company is holding back information | ○ | ○ | ○ | ○ | ○ |

| Taken all the factors above into account, how satisfied are you in general with… | very unsatisfied | unsatisfied | neither satisfied nor unsatisfied | satisfied | very satisfied |
|---|:---:|:---:|:---:|:---:|:---:|
| Your direct superiors? | ○ | ○ | ○ | ○ | ○ |
| Your shipping company? | ○ | ○ | ○ | ○ | ○ |

## JOB STRESS

| Considering your own working situation, how often do you experience the following conditions? | very often or always | often | sometimes | seldom | very seldom or never |
|---|---|---|---|---|---|
| Shift work with uncomfortable watches | ○ | ○ | ○ | ○ | ○ |
| Very high work pace | ○ | ○ | ○ | ○ | ○ |
| Very high work load | ○ | ○ | ○ | ○ | ○ |
| Very little variation in the work | ○ | ○ | ○ | ○ | ○ |
| No time for breaks | ○ | ○ | ○ | ○ | ○ |
| Not being able to perform your work in accordance to procedures | ○ | ○ | ○ | ○ | ○ |
| Co-workers without necessary competence | ○ | ○ | ○ | ○ | ○ |
| Co-workers that are not trustworthy | ○ | ○ | ○ | ○ | ○ |
| Being ordered to other ships or duties with short notice | ○ | ○ | ○ | ○ | ○ |
| Difficulty staying in contact with family and friends at home | ○ | ○ | ○ | ○ | ○ |
| Lack of information about the world outside the ship (e.g. News and world events) | ○ | ○ | ○ | ○ | ○ |
| Disturbing noise from the ship | ○ | ○ | ○ | ○ | ○ |
| Disturbing vibrations from the ship | ○ | ○ | ○ | ○ | ○ |
| Too extreme temperature (heat or cold) onboard the ship | ○ | ○ | ○ | ○ | ○ |
| Worry because of rough sea or weather | ○ | ○ | ○ | ○ | ○ |
| Having always to be kind and forthcoming even when I don't feel like it | ○ | ○ | ○ | ○ | ○ |
| Lack of training in new personnel | ○ | ○ | ○ | ○ | ○ |
| Too little time to load and unload cargo or passengers at port | ○ | ○ | ○ | ○ | ○ |
| Having to work overtime | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| An uncomfortable high amount of responsibility | ○ | ○ | ○ | ○ | ○ |
| Having to make decisions too quickly | ○ | ○ | ○ | ○ | ○ |
| Having to make decisions in situations where decisions are hard to make | ○ | ○ | ○ | ○ | ○ |
| Doing tasks that require complete concentration without having the necessary time | ○ | ○ | ○ | ○ | ○ |
| Doing routine tasks | ○ | ○ | ○ | ○ | ○ |
| Being interrupted in my work | ○ | ○ | ○ | ○ | ○ |
| Having to do tasks that my training did not prepare me for | ○ | ○ | ○ | ○ | ○ |
| Being exposed to threats | ○ | ○ | ○ | ○ | ○ |
| Being assaulted | ○ | ○ | ○ | ○ | ○ |
| Being able to communicate socially with my co-workers during work | ○ | ○ | ○ | ○ | ○ |
| Doing a task were an error could result in co-workers being hurt | ○ | ○ | ○ | ○ | ○ |
| Doing a task were an error could result in financial loss for the company | ○ | ○ | ○ | ○ | ○ |

| How much stress du you perceive? | very much | much | somewhat | little | very little or none |
|---|---|---|---|---|---|
| Taken all the factors above into account, how much stress do you in general perceive during your work? | ○ | ○ | ○ | ○ | ○ |

## OTHER RELEVANT JOB STRESS QUESTIONS

Below you will find some job stress questions which are included solely to validate the questionnaire. It is very important for the validation that you complete them.

| Considering your own working situation, how often do you experience the following working conditions? | very often or always | often | sometimes | seldom | very seldom or never |
|---|---|---|---|---|---|
| My workload varies and results in my work piling up | ○ | ○ | ○ | ○ | ○ |
| I have to work overtime | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| I have to work at a high tempo | ○ | ○ | ○ | ○ | ○ |
| I have a lot to do | ○ | ○ | ○ | ○ | ○ |
| My work requires a high work capacity | ○ | ○ | ○ | ○ | ○ |
| I have to make quick decisions | ○ | ○ | ○ | ○ | ○ |
| My work is too complicated for me | ○ | ○ | ○ | ○ | ○ |
| My work demands total concentration | ○ | ○ | ○ | ○ | ○ |
| My work requires high precision | ○ | ○ | ○ | ○ | ○ |
| I get interrupted during my work | ○ | ○ | ○ | ○ | ○ |
| My work requires complicated decisions | ○ | ○ | ○ | ○ | ○ |
| My work is monotonous | ○ | ○ | ○ | ○ | ○ |
| I have to repeat the same task within only a few minutes | ○ | ○ | ○ | ○ | ○ |
| I do work that requires knowledge beyond my education | ○ | ○ | ○ | ○ | ○ |
| My skills and personal expertise is useful in my work | ○ | ○ | ○ | ○ | ○ |
| My work is challenging in a positive way | ○ | ○ | ○ | ○ | ○ |
| I find my work meaningful | ○ | ○ | ○ | ○ | ○ |
| My work requires me to learn new skills and knowledge | ○ | ○ | ○ | ○ | ○ |
| I can socialize with my co-workers during work | ○ | ○ | ○ | ○ | ○ |
| I am threatened or assaulted at work | ○ | ○ | ○ | ○ | ○ |
| If I make an error, I put others in danger | ○ | ○ | ○ | ○ | ○ |
| If I make an error, I risk financial loss | ○ | ○ | ○ | ○ | ○ |

## MY JOB SATISFACTION

| Considering your own working situation, how satisfied are you with the following working conditions? | very unsatisfied | unsatisfied | neither satisfied nor unsatisfied | satisfied | very satisfied |
|---|---|---|---|---|---|
| My workload onboard | ○ | ○ | ○ | ○ | ○ |
| The task I am given | ○ | ○ | ○ | ○ | ○ |
| Deadlines given to me | ○ | ○ | ○ | ○ | ○ |
| The use of my competence | ○ | ○ | ○ | ○ | ○ |
| The respect my co-workers have for my work | ○ | ○ | ○ | ○ | ○ |
| The possibilities for variation | ○ | ○ | ○ | ○ | ○ |
| The freedom to perform tasks as I want to | ○ | ○ | ○ | ○ | ○ |
| The freedom to plan my work as I want to | ○ | ○ | ○ | ○ | ○ |
| The quality of the work I do | ○ | ○ | ○ | ○ | ○ |
| The opportunity to develop new competence in my work | ○ | ○ | ○ | ○ | ○ |
| The support I receive from my co-workers | ○ | ○ | ○ | ○ | ○ |
| My chances for a promotion | ○ | ○ | ○ | ○ | ○ |
| The amount of pay I receive | ○ | ○ | ○ | ○ | ○ |
| The opportunities the shipping company provides for furthering my education | ○ | ○ | ○ | ○ | ○ |
| The communication I have with the employees in other departments | ○ | ○ | ○ | ○ | ○ |
| The communication I have with the people onboard the ship | ○ | ○ | ○ | ○ | ○ |
| The competence of my co-workers | ○ | ○ | ○ | ○ | ○ |
| The way I am treated onboard the ship | ○ | ○ | ○ | ○ | ○ |
| The benefits the company offers me | ○ | ○ | ○ | ○ | ○ |

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| My work is rewarding | ○ | ○ | ○ | ○ | ○ |
| I often receive tasks I perceive as meaningless | ○ | ○ | ○ | ○ | ○ |
| I do a lot of work that should be done by others | ○ | ○ | ○ | ○ | ○ |
| Rules or procedures make my job difficult | ○ | ○ | ○ | ○ | ○ |
| I don't worry about losing my job | ○ | ○ | ○ | ○ | ○ |
| If a crisis should occur, I am confident that my co-workers would handle it | ○ | ○ | ○ | ○ | ○ |
| My family is putting pressure on me to find work closer to home | ○ | ○ | ○ | ○ | ○ |
| I worry about making mistakes that won't be corrected by others | ○ | ○ | ○ | ○ | ○ |
| I worry about losing my job if I make a serious mistake | ○ | ○ | ○ | ○ | ○ |
| Whenever I feel the need, I can retreat to the quietness of my cabin | ○ | ○ | ○ | ○ | ○ |
| Onboard the ship I hide my worries | ○ | ○ | ○ | ○ | ○ |

| How satisfied are you in general? | very unsatisfied | unsatisfied | neither satisfied nor unsatisfied | satisfied | very satisfied |
|---|---|---|---|---|---|
| When you take all factors mention above and other factors in to consideration, in general how satisfied are you with your job? | ○ | ○ | ○ | ○ | ○ |

## OTHER RELEVANT JOB SATISFACTION QUESTIONS

Below you will find some job satisfaction questions which are included solely to validate the questionnaire. It is very important for the validation that you complete them.

| Considering your own working situation, to which degree would you agree or disagree with the following statements? | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree |
|---|---|---|---|---|---|
| I feel I am being paid a fair amount for the work I do | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| There is really too little chance for promotion in my job | ○ | ○ | ○ | ○ | ○ |
| My supervisor is quite competent in doing his/her job | ○ | ○ | ○ | ○ | ○ |
| I am not satisfied with the benefits I receive | ○ | ○ | ○ | ○ | ○ |
| When I do a good job, I receive the recognition for it that I should receive | ○ | ○ | ○ | ○ | ○ |
| Many of our rules and procedures make doing a good job difficult | ○ | ○ | ○ | ○ | ○ |
| I like the people I work with | ○ | ○ | ○ | ○ | ○ |
| I sometimes feel my job is meaningless | ○ | ○ | ○ | ○ | ○ |
| Communications seem good within this organization | ○ | ○ | ○ | ○ | ○ |
| Raises are too few and far between | ○ | ○ | ○ | ○ | ○ |
| Those who do well on the job stand a fair chance of being promoted | ○ | ○ | ○ | ○ | ○ |
| My supervisor are unfair to me | ○ | ○ | ○ | ○ | ○ |
| The benefits we receive are as good as the ones most other organizations offer | ○ | ○ | ○ | ○ | ○ |
| I do not feel that the work I do is appreciated | ○ | ○ | ○ | ○ | ○ |
| My efforts to do a good job are seldom blocked by red tape | ○ | ○ | ○ | ○ | ○ |
| I find I have to work harder at my job than I should because of the incompetence of people I work with | ○ | ○ | ○ | ○ | ○ |
| I like doing the things I do at work | ○ | ○ | ○ | ○ | ○ |
| The goals of this organization are not clear to me | ○ | ○ | ○ | ○ | ○ |
| I feel unappreciated by the organization when I think about what they pay me | ○ | ○ | ○ | ○ | ○ |
| People get ahead as fast here as they do in other places | ○ | ○ | ○ | ○ | ○ |
| My supervisor shows too little interest in the feelings of subordinates | ○ | ○ | ○ | ○ | ○ |
| The benefit package we have is equitable | ○ | ○ | ○ | ○ | ○ |
| There are few rewards for those who work here | ○ | ○ | ○ | ○ | ○ |
| I have too much to do at work | ○ | ○ | ○ | ○ | ○ |
| I enjoy the company of my co-workers | ○ | ○ | ○ | ○ | ○ |
| I often feel that I do not know what is going on with the company | ○ | ○ | ○ | ○ | ○ |
| I feel a sense of pride in doing my job | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| I don't feel my efforts are rewarded the way they should be | ○ | ○ | ○ | ○ | ○ |
| I am satisfied with my chances for promotion | ○ | ○ | ○ | ○ | ○ |
| There is too much bickering and fighting at work | ○ | ○ | ○ | ○ | ○ |
| My job is enjoyable | ○ | ○ | ○ | ○ | ○ |
| Work assignments are often not fully explained | ○ | ○ | ○ | ○ | ○ |

## ABOUT MYSELF

Please provide us with some information about yourself. All information is treated confidentially. When you are required to write information in a yellow cell, click on the yellow cell and use keyboard to enter the information

| Your gender | ○ Male | ○ Female |
|---|---|---|
| Your age | ○ 20 or younger | ○ 20 - 24 |
| | ○ 25 - 29 | ○ 30 - 34 |
| | ○ 35 - 39 | ○ 40 - 44 |
| | ○ 45 - 49 | ○ 50 or older |
| Your nationality | ○ Norwegian | ○ Pilipino |
| | ○ Indian | ○ Polish |
| | ○ Russian | ○ Chinese |
| | ○ Swedish | ○ Other nationality |
| | If you chose other, please write your nationality below in the yellow cell | |
| Relationship status | ○ Single | ○ Married / Living partner |
| | ○ Widow / Widower | ○ Divorced |

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| | |
|---|---|
| How long have you been in this company (number of years and months) | Please enter number of years and months in the yellow cells below<br><br>☐ Years    ☐ Months |
| How long have you been in your current position (number of years and months) | Please enter number of years and months in the yellow cells below<br><br>☐ Years    ☐ Months |
| How many shipping companies have you been with before this one | Please enter number of shipping companies in the yellow cells below<br><br>☐ Companies |
| Your type of ship | ○ PGS          ○ Ro-ro<br><br>○ Offshore fleet    ○ Passenger / Cruise<br><br>○ Other type of ship<br><br>If you chose other, please write your type of ship below in the yellow cell<br><br>☐ |
| What is your position? | ○ Officer / Manager    ○ Rating / Subordinate |
| Please mark your current position | <u>Industrial ship</u><br><br>○ Deck          ○ Engine<br><br>○ Ship assistant    ○ Apprentice<br><br>○ Bridge         ○ Catering<br><br><br><u>Passenger / Cruise ship</u><br><br>○ Deck          ○ Engine<br><br>○ Ship assistant    ○ Apprentice<br><br>○ Bridge         ○ Boarding assistant/Cleaning<br><br>○ Catering/Restaurant/Shop/Conference center |

| | |
|---|---|
| | ○ Other position |
| | If you chose other, please write your position in the yellow cell below |
| | |
| Please use the yellow box to the right to write what you think is the most important thing for you to have a good working environment on board your ship (up to 50 words) | |
| If you have any comments to the questionnaire, you can write them in the yellow box to the right (up to 50 words) | |
| Where are you or right now? | ○ In port   ○ In transit   ○ In lay up   ○ On land |

## END OF THE QUESTIONNAIRE

Ready - submit values

## THANK YOU FOR YOUR PARTICIPATION

This is the end of the questionnaire. We thank you for your participation. You can now close the questionnaire by clicking the button bellow.

> Finished -
> Close questionnaire