



**CHALMERS**



# **Equal treatment education-training and social equality practice upon maritime students and professionals**

A literature review identifying facilitators and barriers

Bachelor thesis for Master Mariner Program

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DEPARTMENT OF MECHANICS AND MARITIME SCIENCES

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CHALMERS UNIVERSITY OF TECHNOLOGY  
Gothenburg, Sweden, 2021



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Cover: *A creative message to women that support one another*

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Gothenburg, Sweden, 2021

## **PREFACE**

This research constitutes our bachelor thesis in nautical sciences at Chalmers University of Technology, Sweden. The authors are studying bachelor's degree in nautical sciences and this report is the final step towards the exam.

When we first encountered the program, there was little information about gender equality or harassment on that topic. The idea of a male-dominated industry was already thought of, but we did not know the impact that it was going to bring to us as students.

The absence of procedures for learning about equality is especially shown at the workplace when going on the internship periods. That is when the idea was brought from us to enhance the topic of gender equality and in other perspectives.

The expectations were to get a better understanding of the gaps that exist in the maritime industry regarding equality. It was also to convey the importance of the topic to others in an accessible way.

We would like to thank those who have been contributing to our work, especially thanks to our supervisor Johan Hartler who has given valuable suggestions and we would also like to give thanks to the librarians at Chalmers library who have done a wonderful job giving us the good prerequisites.

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## **ABSTRACT**

### **Background**

With diversity in equal treatment education-training and social equality practice upon maritime students and professionals, this study aimed to conduct a global situation analysis, through an integrated literature review, to identify the facilitators and barriers in equality to improve social equality practice for maritime students and professionals.

### **Methods**

By using an integrative review we conducted a systematic literature review including the five key stages of; problem identification, literature search, data evaluation, data analysis, and presentation of results. The literature searches were conducted in databases and a deductive data analysis against equality was performed.

### **Results**

The search identified 223 articles, of which 23 articles were included. For social equality practices, the main barrier between education, regulation, and the labour market was identified. Education has come far to improve equality whilst the market does it voluntarily based on economic circumstances and stereotypes. Structural mechanisms such as regulations, leadership, and future technologies can facilitate an equal level of social equality for all.

### **Conclusions**

The barrier between theory and practice for maritime students and professionals is due to a will to sustain systems. There is hope for the future through education and training and with the individual will to change attitudes, also worldwide policies can pave the way for a change that will take time. Training ashore, at ships, and face to face is suggested for leaders, managers, maritime students, and professionals based on barriers identified in this study.

**Keywords:** maritime, seafarer, equality, training, education, status, rights, opportunities

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## **SAMMANDRAG**

### **Bakgrund**

Genom mångfald och likabehandling i utbildning samt genom social jämställdhetsutövning för sjöfartsstudenter och maritimt yrkesverksamma syftade denna studie till att genomföra en global lägesanalys genom en integrerad litteraturstudie för att identifiera främjande faktorer och hinder för jämlikhet. Detta för att förbättra socialt jämställdhetsarbete för sjöfartsstudenter och aktiva maritimt yrkesverksamma.

### **Metod**

Genom att använda integrativ analys genomfördes en systematisk litteraturöversikt innehållande fem steg vilka var; identifiering av problem, litteratursökning, värdering av data, dataanalys och presentation av resultat. Litteratursökningen genomfördes i databaser och en deduktiv dataanalys av jämlikhet har genomförts.

### **Resultat**

Databassökningen genererade 223 artiklar, varav 23 artiklar inkluderades i resultatet. Det tydligaste hindret för social jämlikhet identifierades som skillnaden mellan utbildning och arbetsmarknadens villkor. Utbildningen har kommit långt för att förbättra jämställdhet samtidigt som arbetsmarknadens villkor följer frivilliga incitament baserat på ekonomiska förhållanden och efterfrågan. Strukturella mekanismer som regelverk, ledarskap och framtida tekniska lösningar kan underlätta för att uppnå social jämlikhet.

### **Slutsats**

Hinder för att uppnå social jämlikhet hos sjöfartsstudenter och yrkesverksamma beror på viljan att upprätthålla rådande system. Det finns möjligheter att uppnå social jämlikhet genom utbildning, genom vilja att ändra attityder och genom världsomspännande politiska beslut som banar väg för förändring. För att förbättra social jämlikhet rekommenderas utbildning och kurser i land och på fartyg för ledare, chefer, sjöfartsstudenter och maritimt yrkesverksamma med fokus på tolerans av olikheter utifrån de hinder som identifierats i denna studie.

**Sökord:** maritim, sjöfarare, jämlikhet, kurser, utbildning, status, rättigheter, möjligheter

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## ACRONYMS AND TERMINOLOGY

Equality	State of being equal, especially in status, rights, or opportunities
Equality training	To learn and interpret the state of being equal in status, rights, or opportunities
GECAMET	Gender Equality and Cultural Awareness in Maritime Education and Training
MET	Maritime Education Training
OECD	Organisation for Economic Co-operation and Development
Social equality practice	To treat equality amongst other people in practice
Training	The action of teaching a person or animal a particular skill or type of behaviour

# 1. INTRODUCTION

The importance of social equality is humongous. Some people see it as something obvious and natural, while others do not practice it thoroughly. Social equality can be seen and practiced on an individual level, in groups, and nations. Social equality is not just something that is needed on a global level, but the maritime business has an interest in social equality to develop the maritime sector.

Equal treatment training is a part of social equality practices in this study. Equal treatment implies sex, gender, religion, ethnicity, equality, and age. Those are the grounds for discrimination and people need to be enlightened on the topic.

## 1.1 Background

Equality between men and women has proven to be necessary to obtain sustainable development within political, economic, and social aspects (United Nations, 2020a). The United Nations sustainable goals have equality as one goal – goal number five. This strives to make all nations on the same level regards social equality.

At the same level, one global goal that has importance for the shipping industry is number ten; reduced inequalities (United Nations, 2020a). This goal strives to make all individuals self-sufficient so that a whole nation can grow financially and socially.

IMO (the International Maritime Organization) has their interpretation of the sustainable development goals. Goal number eight aim to promote productive and fair employment for seafarers. This includes the working environment that covers both fair treatment and liability.

A global labour market is a key to achieve status, rights, and opportunities within equality in the maritime industry. The last two decades of the twentieth century saw a development in crew composition when many OECD-countries (Organisation for Economic Co-operation and Development) decided to abort crew nationality requirements. When assembling crews, the combination of different nationalities took form (Alderton et al., 2004).

As explained by (Alderton & Winchester, 2002) the shipping industry is the only example of a fully globalized industry, the global seafarer market has profoundly affected the seafarer labour market. In 1998, about half of the maritime fleet (51.3 %) was flagged to FOC's. FOC is Flags Of Convenience and means that the vessel is owned by another country than the nation belonging to its flag. The main reason for this was economic reasons, such as labour costs. On FOC vessels the life of the seafarer was different from the rest of the fleet. The seafarers were from the less developed countries in the world. They tend to be less paid than seafarers from the more developed countries. Lastly, the working conditions seemed to be inferior. Along those circumstances, new demands raised upon skills and personnel, since new technology developed. To support the labour market within shipping, international and national regulators need to take action, specifically ITF (International Transport Workers Federation) and ILO (International Labour Organization) regarding the labour market.

According to IMO, the proportion of women seafarers is less than 2% globally and 94 percent of these women are working in the cruise industry. IMO is working together with the UN to achieve the SDGs (Sustainable Development Goals). To make sure that the maritime education and profession will gain the latest updates about social equality, all workplaces, and

maritime educators should need a social equality training course or education. In some institutions it is called *equal treatment training* (International Maritime Organization, 2020).

This study will look at the maritime students' and professionals' attitudes and experiences towards social equality and the facilitators and possible shortcomings in achieving the purpose of the equality training and social equality practices among different nations. The study will be done with an integrative literature review that contributes to compiling knowledge about the topic. Little has been written on the topic before and it is of great importance for people to be aware of the benefits of equality and why equality is important for sustainability in society and work environment for maritime students and professionals.

## **1.2 Aim of the study**

To conduct a global situation analysis, through an integrated literature review, to identify the facilitators and barriers in equality to improve social equality practices for maritime students and professionals.

## **1.3 Research questions**

What facilitates social equality practice?

What barriers are identified for social equality practice?

## **1.4 Delimitations**

The study is limited to discrimination of sex, gender, religion, ethnicity, equality, and age and with a search strategy including a global perspective. The study will include both maritime students and professionals. Integrative literature review makes it possible to get a broad search area, which is useful when there is limited research within the selected area. This was the case in this study. To get 23 included studies we had to include articles using qualitative, quantitative, and mixed methods. This strengthens this literature review by not including only qualitative methods as would be the case with qualitative metasynthesis but includes articles based on its content. The integrative method enables the possibility to adopt a more holistic and comprehensive understanding of the result and thereby strengthen the credibility of the main findings in this review. The integrative method has in this case been time-consuming due to a larger range of articles to be assessed, analysed, and synthesized. Combining different data sources is complex and challenging and the user must have some knowledge of both qualitative, quantitative, and mixed-methods research to find the particular content of interest in the article. The researchers must be able to assess the process that led to the results of the articles, to quality assess each article, and prevent errors. Generalizability and transferability may be affected by the rigor in which a particular research process has been performed. Ethics has been considered as being used in an accepted way by those who performed the original research. We have done this review with as much quality in each step as possible considering ethical aspects.

## **2. THEORY**

### **2.1 United Nations impact on global sustainability**

The decolonization between the 1960s' and 1980s' started a change in international equality by reshaping laws and systems in the law of natural resources. What was first a domestic matter later became a problem on an international basis. The United Nations enriched the international laws to take place for newly independent states economically. The term equality took a broader meaning and economic efficiency became more important to treat inequities in terms of wealth, income, and opportunities, especially between industrialized and developing countries (Cottier, 2015).

The United Nations have global sustainability goals that are implied over the globe and the participating nations. There are three generations of goals in the UN, and those are years 2000, 2015, and 2030. In the year 2000, the equality issue was already raised at that moment and created the first edition of sustainable development goals. This clarifies the importance of the gender equality matter since the problem has been questioned already at that time and it is still a situation to be worked with. Today the UN is striving for the year 2030 and the goals that are in force today.

Goal number five is one of the most central related to equality today.

The sub-goals that equality within gender and the maritime business relates to are;

- 5.1 “End discrimination of women and girls”
- 5.2 “End violence and exploitation of women and girls”
- 5.5 “Ensure full participation for women in leadership and decision making”
- 5A “Equal rights to financial resources and ownership and access to financial services”
- 5B “Strengthen the role of women using technology”
- 5C “Create laws and action plans for gender equality”

Those goals are most focused on gender equality, but it is equally important to consider the other discrimination grounds. The UN goal number ten strives to implement equality among ethnicities and cultures.

The sub-goals that equality within ethnicity and the maritime business relates to are;

- 10.2 “By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or another status”
- 10.3 “Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies, and practices and promoting appropriate legislation, policies, and action in this regard”
- 10.4 “Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality” (United Nations, 2020b).

Those goals are essential to reach to gain peace in society. With peace in society, a better understanding of equality is gained. In the maritime sector, specific sub-goals are necessary. This will build the platform for some of the main points and reasoning in the study.

## **2.2 Resolutions and regulations**

### **2.2.1 International Maritime Organization (IMO)**

IMO has adopted a resolution on 4 December 2019; Resolution A.1147(31). The goal for the resolution is to “PRESERVING THE LEGACY OF THE WORLD MARITIME THEME FOR 2019 AND ACHIEVING A BARRIER-FREE WORKING ENVIRONMENT FOR

WOMEN IN THE MARITIME SECTOR”. The resolution urges governments, maritime administrations, and the industry to engage in a barrier-free environment and to overcome the existing barriers. These barriers are specially placed at recruitment, training, capacity-building, technical cooperation, and promotions. It all falls under SDG 5 (United Nations, 2020a). The resolution encourages the maritime industry to do best practices so that the barriers for women seafarers could be eliminated. The resolution also mentions the importance of evidence and collecting data about the number of participating women seafarers in the industry. This would set baselines, identify gaps and establish policies aimed for removing these barriers (IMO, 2019).

The motto according to IMO regarding equality is that equality means progress for all. Women is an effective way to open up for progress within communities, companies and whole countries. A study from Catalyst shows that women as leaders perform better at cases with equity, sales and invested capital (Joy et al., 2007).

The IMO is supporting women within the maritime career through education and training. This is done particularly in developing countries. IMO is sponsoring fellowships in Israel and France, enabling trainees from different countries to attend the courses. These courses are Women in Port Management courses. In total, women from 32 different countries attended. WIMA is Women in Maritime Associations and has been established in Africa, Arab Emirates, Asia, the Caribbean, Latin America, and the Pacific. That covers 152 countries in total. WIMAs aims to have a platform for the women in the maritime industry to discuss gender issues, but also other issues, for example, technical (International Maritime Organization, 2020).

### **2.2.2 International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW)**

The backbone of each maritime course lies in the competencies that must be gained by the student and mentioned as requirements in the STCW 95 Convention. STCW '95 assures a minimum standard of Competences (International Maritime Organization, 2021).

It is not yet implemented by the regulation that education within the maritime programs regarding equality must exist. STCW has only been amended concerning gender equality and is still not implemented by all participating states. Resolution 14 in amendment of STCW 2010 states “Promotion of the participation of women in the maritime industry”. In particular, this means:

- “– to give special consideration to securing equal access by men and women in all sectors of the maritime industry; and
  - to highlight the role of women in the seafaring profession and to promote their greater participation in maritime training and at all levels in the maritime industry.”
- (Kormych, 2020, p. 30)

### **2.2.3 International Labour Organization (ILO)**

Up until the 19th century, women had very few rights, due to religious, political, or national reasons. Guided by the idea of equality between men and women and the elimination of discrimination, the International Labor Organization (ILO) adopted the declaration of the missionary mission and the purposes of the ILO in 1944. The declaration states that “all human beings, irrespective of race, creed or sex, have the right to pursue their material well-

being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity” (International Labour Organization, 2020). For ILO, women's rights are an integral part of the values, principles, and goals of the promotion of social justice and decent work (International Labour Organization, 2007). Globally, men are more likely to be part of the workforce than women. A United Nations (2015) report shows that 77% of men and 50% of women of working age are employed (United Nations, 2015). In the maritime industry, one of the biggest challenges is ensuring diversity in seafarer hiring, including the hiring of women and other under-represented groups (Safety4sea, 2020). Regardless of race, colour, sex, religion, political opinion, national extraction or social origin, nationality, gender, and sexual orientation, all seafarers have the right to equality (International Labour Organization, 2019a) Today, women account for only 2 percent of the world's 1.2 million seafarers and 94 percent of female seafarers work in the cruise industry (International Maritime Organization, 2020).

According to Elisabeth Suciu, Cécile Sadoux, Dionisio González at the International Association of Public Transport, the problem with employment has to do with human rights and that procedures must be planned and performed in line with women's voices, both workers and passengers. The labour market is controlled by social justice and firstly that problem need to be solved for women to participate in the industry in all areas (International Transport Forum, 2019).

## **2.3 Equality projects and organizations**

### **2.3.1 Gender Equality and Cultural Awareness in Maritime Education and Training (GECAMET)**

GECAMET is an international project financed by the International Association of Maritime Universities and the Nippon between 2017 and 2018. GECAMET includes both gender and ethnicity perspectives (European Center for Social Responsibility, 2020).

MET (Maritime education and training) is crucial for shaping future gender and culture-sensitive seafarers. MET institutions are expected to play multifaceted roles in the education and training of maritime students. Four important roles include: 1. serving as a training ground for future men and women who are expected to be equipped with technical knowledge, skills and attitude as part of the formulaic triad of competencies; 2. raising future seafarers with sensitive minds and character, more aware of life at sea and having them understand and be adaptive to diverse cultural orientations; 3. developing a mindset that erases gender biases and rises above cultural differences; 4. raising gender and cultural awareness by integrating such ideals in their curriculum and instruction. (Dragomir et al., 2018)

### **2.3.2 Women's International Shipping & Trading Association (WISTA)**

WISTA is a global organization that connects female workers within the maritime industry. Currently, 53 countries are connected to WISTA. Their mission is to:

- Minimize leadership gap in the maritime and transport sector.
- Creating a platform for its members to exchange contacts, information, and experiences.
- Promoting business relations.
- Enhance professional development.
- Provide connections with other organizations worldwide

(Women's International Shipping & Trading Association, 2021)

### **2.3.3 One actor is the Swedish Shipowners Association “Vågrätt”**

In Sweden, several organizations are working with equality training. One industry-wide action that took form in the year 2015 is “Vågrätt”. One of the actors is the Swedish Shipowners Association that gathers other organizations together. They have a guideline for shipping companies on how to work to prevent discrimination and harassment (Sweship, 2020).

### **2.3.4 Maritime Joint Work Environment Council (SAN)**

The main goal of SAN is to work with the working environment onboard ships. The work environment should be safe and secure. SAN works together with employers to promote good unity and information in form of increased knowledge about risks (SAN, 2021). SAN is providing a manual on working environment for seafarers. The manual states that pregnant women working onboard a ship should be given an individual risk assessment for the working tasks being performed. Discrimination is just not about gender equality, according to SAN it involves many aspects such as exceeding workloads and working hours (Prevent, 2016, pp. 28-29).

## **2.4 Discrimination grounds**

### **2.4.1 Gender factor**

Leonard and Levine (2003) explain that most companies tend to recruit men because men are viewed having greater results and their professional abilities meanwhile women are stereotyped in these qualities. Gender diversity is also reinforced by assumptions which make the male status more favourable (Jonathan S. and Leonard and David I. Levine, 2003). According to Brown (2008) a significant degree of workplace diversity is often not successful because the problem is not understood from the beginning. The first goal to overcome is that women should not suit men (Brown, 2008).

### **2.4.2 Religious factor**

In developing the idea of a connection between religion and economic life, some recent research has focused on the idea of work-faith integration and the ways in which workers are affected by their faith in relation to their jobs (Lynn et al., 2011). In the USA, from 1997 to 2017, complaints filed on the grounds of religious discrimination have more than doubled (Cantone & Wiener, 2017).

### **2.4.3 Ethnicity factor**

The definition of ethnicity discrimination is that one person or one group of persons are being unfairly treated in relation to others in regards to their race, skin colour, national or ethnic origins or their faith (Prevent, 2016, p. 30). According to Opstal (2009), avoidance of ethnic conflict would lead to problems for the employer such as less productivity, lower business morale and decline in corporate results (Opstal, 2009).

### **2.4.4 Age factor**

Studies found that age similarity between team leaders at the workplace could cause contact intensity and on the other hand age differences could result in a detrimental effect on the team. A group with different ages promote growth in partnerships (Tsui et al., 1992). Other



studies suggest that a wide range of ages enhance the consistency of decision making in the team with positive effect on the work environment (Pelled, 1996).

### 3. METHOD

Inspired by the integrative review we conducted a systematic literature review including the five key stages of problem identification; literature search; data evaluation; data analysis and presentation of results. The literature searches were conducted in databases and a deductive data analysis against equality was performed.

#### 3.1 Design

The method undertaken was an integrative literature review. This was according to a definition by Richard J. Torraco from the University of Nebraska-Lincoln (Torraco, 2005). The use of an integrative literature review aims to address the range of research activity and research barriers on the subject and to generate new knowledge from the narrow amount of existing research. This is by using both qualitative and quantitative data. The method is based on a review, critization, and synthesis of the literature that contributes to new frameworks and perspectives of the material worked with. The choice of an integrative literature review is the added value to, and importance, of the topic. It is also a good opportunity to compare old and new studies.

#### 3.2 Eligibility criteria

By an inclusion and exclusion criteria list developed by relevant PICO (Participants, intervention, comparators, outcome), the relevant sources of information were chosen (Joanne E McKenzie, 2020). See table 1. The period included in the search was not defined. This led to a wider range of articles published over a long period, and the possibility to compare new and old research. The participants in the study were maritime students and maritime professionals. The intervention was maritime education. Comparators are between the maritime students and the professionals. This will be elaborated on in the discussion section. The outcome is skills, knowledge, behaviour, attitudes, perception, and experiences as a result of maritime sector equality training (Tianjing Li, 2020).

**Table 1**

*Inclusion and exclusion criteria*

Inclusion criteria	Exclusion criteria
Maritime sector equality training	Non-training
Maritime education	Other education
Maritime students	Non-maritime students
Maritime professionals	Non-maritime professionals
Originally research	Literature reviews
Conference papers	
Grey literature	
English articles	Articles with other languages
All years of publication	
Worldwide	

*Note.* Inclusion and exclusion criteria for the literature search

#### 3.3 Information sources

A literature search was conducted in December 2020 using the databases *Scopus* and *Web of Science* by both authors at the same time. Access to the databases was provided by Chalmers university of technology. The included articles were peer-reviewed published science-based

articles from 2005 – 2020. Other than original articles, conference papers and grey literature were also used.

### **3.4 Search strategy**

The area of search was worldwide. In the search, the boolean operator “AND” was used between the words to limit retrieved articles addressing social equality practice and maritime sector equality training and education.

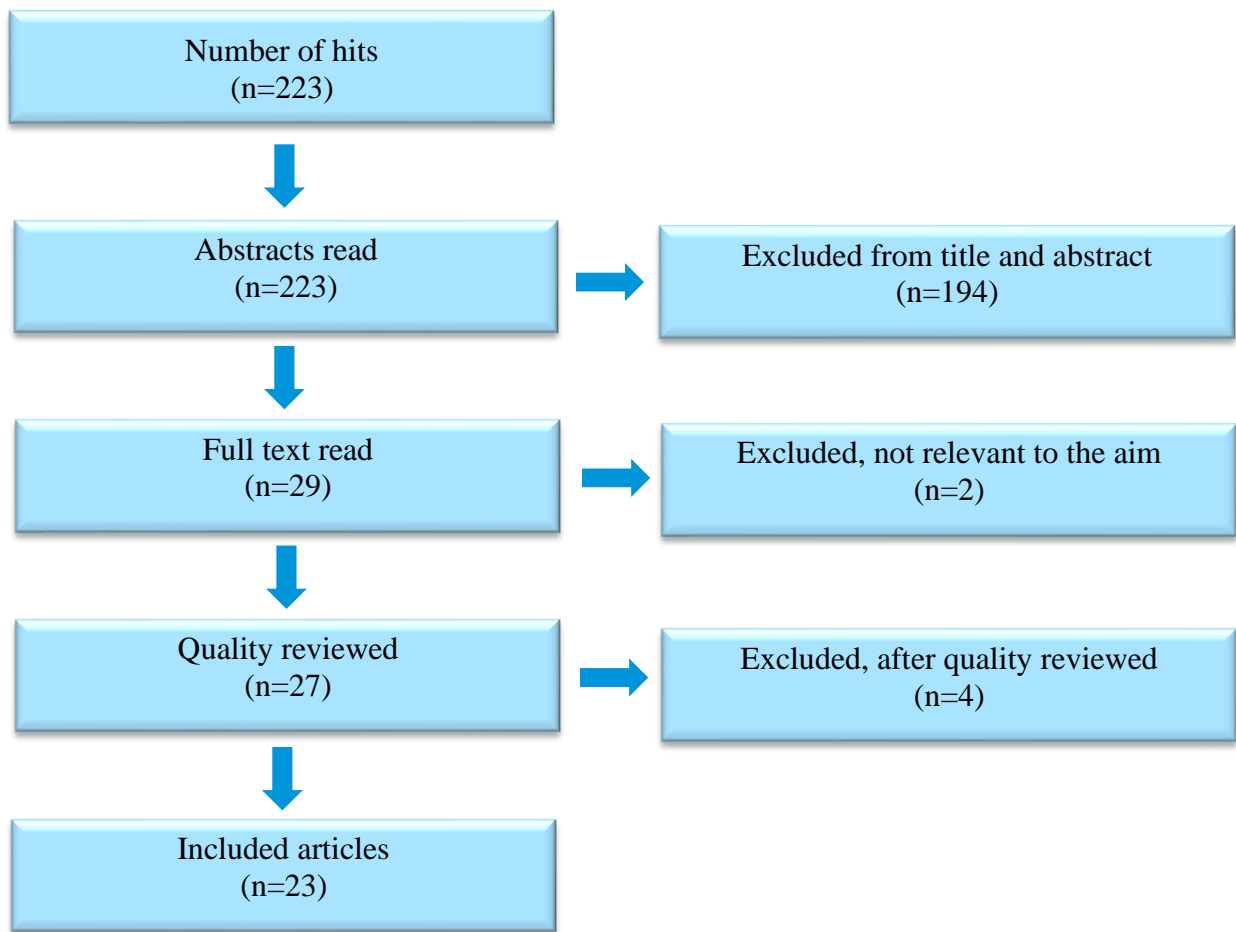
The search was divided into three parts. The first part included the words maritime, seafarer, equality, training, education. In the first search, there were few numbers of hits, a total number of 19, and 11 of those were included. Therefore, a second search was conducted with the word inequality instead of equality which resulted in an additional seven numbers of hits where four articles were included. The target groups seafarers, seafarer students, maritime professionals, and maritime students were included in seafarer and maritime.

The third search included the words maritime, seafarer, training, education gender, religious, ethnic, age, and the additional word multicultural was added to extend the number of hits related to gender, religion, ethnicity, and age. The word religious was used instead of religion and ethnic instead of ethnicity. The third search resulted in an additional 197 hits where 14 were included. The subjects focused on the term equal were sex, gender, religion, ethnicity, equality, and age. The word sex was included in the word gender. This was to capture studies focusing on equality in the result section of the articles that were in line with the aim of the study.

The included articles focus to identify status, rights, and opportunities. Because of the broad definition of equality, the result of equality is shown of change in status, rights, and opportunities.

The search was divided into several constellations of words in both databases (see Appendix V). The total number of articles included was 23.

**Figure 1**  
*Systematic flowchart*



*Note. Systematic flowchart to show the number of hits included and excluded articles used in the result section.*

### **3.5 Study selection**

Based on the aim of this study and the outcome measures of the PICO, the abstracts were read through individually by the two authors with great agreement on which articles should be included and excluded (29 articles to be included). If the titles, aim, and the result was in line with the aim of this study and the PICO they were included to be read in full text. When the articles were read in full text, those who were relevant to this study were included in the quality appraisal. After this step, the quality appraisal was used for further assessment and potential inclusion or exclusion. See title 3.6 Quality appraisal of the chosen studies. The articles that were excluded had narrative content about medical issues, technical issues, workforce surveys, non-education, and fast-track careers.

### **Participants' origin**

Belgium, Bulgaria, China, Croatia, Finland, Greece, Montenegro, Norway, India, Poland, Ukraine, Romania, Russia, Slovenia, Sweden, Spain, Egypt, Peru, Uruguay, Japan, Philippines, Pakistan, Switzerland, Australia, Great Britain, Netherlands, USA, France, Taiwan, Turkey, Tunisia, Germany, Hong Kong, Venezuela.

### **Participants'**

For the qualitative studies (n= 480) participants and the quantitative studies (n=5354) participants were included in this literature review.

Maritime students, nautical students, engineering maritime students, underwater technology students, maritime graduates, professional seafarers, ex-seafarers working ashore, and university professors.

### **Data gathering and analysis methods included in the studies**

Questionnaire, quantitative survey, qualitative interviews, observations, case study, cross-sectional study, online questionnaires and e-mail interviews. Analyses method condensed and interpreted (Graneheim & Lundman, 2004) and for the quantitative it was descriptive statistics such as mean percentage, number and p-value.

### **3.6 Quality appraisal and included articles**

The quality appraisal of the study has been based on Joanna Briggs Institute quality appraisal templates (Joanna Briggs Institute, 2020a) (Joanna Briggs Institute, 2020b). One is aimed at quantitative and one is aimed at qualitative articles. The referred templates are found in appendix I and II. During the quality appraisal, the literature was reviewed and after the quality appraisal, additional articles were excluded.

The quality appraisal for the quantitative material consists of several steps, but those are aimed at medical research, whereby they were modified to match the aim of this study. The quantitative quality appraisal was based on case-control studies. The first step was that there should be several characteristics that comply with our aim than only the participating or aiming group in the article. The second step was that the target group is matched to the case in the study. The third step was that the eligibility criteria were fulfilled for the article. The fourth step was that the articles had a good measurement method in the case of measuring data. The fifth step was that the article and the study had the same measurement method. The sixth step was that the article needed to have considered confounding factors that may or may not impact the results, e.g., behavioural, attitudinal, or lifestyle factors. The seventh step was that the confounding factors were dealt with and the strategies for that stated. The eighth-step was that the outcomes of the article should be assessed in a standard, valid and reliable way

for cases and controls. The ninth step was that the article was long enough to get rich content. The last step was that an appropriate statistical analysis method was used.

The qualitative quality appraisal seeks congruity between the following: philosophical perspective and the research methodology, the research questions and the research methodology, the research methodology and the methods used to collect data, the research methodology and the representation and analysis of data, and the research methodology and interpretation of results. A high-quality report according to the qualitative quality appraisal includes the cultural or theoretical perspective of the researcher. It is also important that the influence of the researcher on the research, and vice versa, is addressed. The article should represent participants if any and their opinions. The article should contain ethical perspectives. Lastly, the article should have a connection between the conclusions drawn and the data collected.

An additional method for quality assessment is inspired by SAGE research methods, Little Green Book (Franzosi, 2011). The main purpose of the book is to understand that numbers need to be put into words and that is pinpointing quantitative research when it comes to quality assessment. One of the things that the author needs to do is to read the material repeatedly and then analyse the content. “Constantly ask yourself the question “Does this passage, this particular piece of information, fit into my story grammar?” (Franzosi, 2011).

In the quality appraisal process, the two authors of the study also discussed ethical principles as described in 3.8 Research ethical considerations.

A test to evaluate the quality of articles was made through the CRAAP-test (Currency, Relevance, Authority, Accuracy, Purpose) which is based on five main requirements for the article to fit the aim of the study (Kenyon College, 2020).

Reasons for the exclusion were that the articles were not available in English, they were literature reviews, and they did not comply or fit with the aim of the study.

The chosen articles were included because of the high quality and relevance to the research questions and aim. See the included articles in appendix III and the excluded articles in appendix IV. A total of 23 articles were included after the quality control. Eight articles of the total 23 are quantitative research and the rest are qualitative research. See figure 1 Systematic flowchart.

### **3.7 Data analysis**

Content analysis can be done in two different ways. The either inductive or deductive analysis process is used. The broad definition of equality was divided into sub-divisions including social equality practice to analyse the material. In this case, the deductive analysis was used because the structure of analysis is operationalized based on previous knowledge. The purpose of the deductive analysis is to build up concepts or categories from the process. The author chooses which one to use. Each of the analysis processes contains three phases: preparation, organising, and reporting. In the first phase, sampling needs to be conducted, which is great to use when an article is too large to be analysed entirely. The second phase is the organising phase (deductive content analysis). This step is based on categorization of data according to the categories. Main category will be followed by generic category and then sub-category. In the study, status, rights and opportunities was the main categories. Leadership skills, power through education, policies, health, equal treatment, awareness and possibilities to choose, leadership, retention, recruitment, career and salary was the generic categories

meanwhile sub-categories were sex, gender, religion, ethnicity, equality, and age. The last phase is reporting which means that the validity of data must be formalized. The trustworthiness was achieved by having authentic citations in the results. The results need to comply with the data (Satu Elo, 2007). To achieve the key points in the literature, it was read through multiple times by the two authors and reviewed.

### **3.8 Research ethical considerations**

When the critical appraisal was performed, the ethical principles were checked against whether they were successfully used or not. According to The Swedish Research Council (The Swedish Research Council, 2020) it is necessary to obtain good research practice. There are principles that this is based on. Reliability, honesty, respect, and accountability. This is regarding the original research articles.

## 4. RESULTS

The research aimed to identify the facilitators and barriers of social equality practices for maritime students and professionals. The search identified 223 articles, of which 23 articles were included and in the result, sections numbered 1 to 23. Please see appendix III. The facilitators and barriers are divided into three tables, table 2, 3, and 4 to summarize the results.

### 4.1 Status

When it comes to status, the facilitators are built upon personal strength and education that starts early in the career. Equal treatment education is crucial to facilitate equality in the maritime sector and companies need to be on the same level as the global market when it comes to the education part.

The greatest barrier of status is the economy since higher education leads to higher costs. But the importance to move equal treatment education to the management level must not be forgotten. Another question that is raised is physical abilities but that it is rather not a problem for female seafarers and that the physical strength is enough for the work. Another barrier is that there are higher tuition fees for females in maritime education. See table 2.

**Table 2**

*Overview of facilitators and barriers - Status*

<i>Facilitators</i>	<i>Barriers</i>
<b>Status</b>	
<ul style="list-style-type: none"> <li>• Personal strength to work in a male-dominated environment</li> <li>• Education</li> <li>• Knowledge and skills</li> <li>• Technology and autonomous shipping</li> <li>• Policies of favour to the market</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of respect, will, and interest</li> <li>• Lack of attitudes change in societies globally</li> <li>• Poverty, customs</li> <li>• The market forces</li> <li>• Economy</li> <li>• Male-dominated hierarchical systems</li> <li>• Tuition fees favouring men</li> </ul>

*Note. An overview of facilitators and barriers in status of equal treatment education-training and social equality practice upon maritime students and professionals*

#### 4.1.1 Personal strength

Personal strength was a facilitator for equality to improve social equality practices for maritime students and professionals (6). One maritime student expressed herself:

*"Fight for what you love..."* (No 6, p. 282, line 6)

Life at sea was expressed as both a physical and a mental challenge that could offer opportunities for women who had personal strength to work in a male-dominated environment and fight for the changes they want to happen when it came to social equality on board. The suggestion to other maritime students and professionals was to develop a thick skin and to stay strong and positive (6).

*"Respect can't be bought nor it can be forced on people. You have to earn it. You can start by respecting yourself."* (No 6, p. 282, lines 8-9)



### 4.1.2 Power through education

Education was a facilitator for social equality not depending on gender but knowledge and skills (6, 10). An assistant shipping manager stated:

*We have no prejudice against women seafarers. As long as they are competent, we will employ them, but the number of women seafarers cannot exceed a certain proportion. Because the career life of women seafarers is usually not long, most of them will leave the sea before the age of 30. Therefore, hiring too many women seafarers will make the management-level seafarer's cultivation break down.* (Male, Assistant shipping manager) (No 10, p. 642, lines 13-16, p. 643, lines 1-2)

Voices were raised among maritime students and professionals that equal treatment training needs to start early in life to change the societies globally. Women working in the maritime industry were identified to deserve better education to escape from the poverty zone in some male-dominated societies. Women were according to the study participants underestimated both by the customs of society and by the state (20).

*"In addition, when women's education is higher than men's background, it means men's self-esteem is low because they fell a sense of inferiority to women"* (No 20, p. 2906, lines 2-6)

Social equality through education was described as a battle against the market forces because higher education led to higher costs. Social equality was stated to be costly in the short term and in the longer term the way forward to gain a sustainable future for the maritime industry. The shipping companies have tried whatever they can to reduce seafarer personnel costs (10). That might be the reason for barriers in equality and in moving social equality practices for maritime students and professionals together with lack of responsibilities for moving the agenda at the management level (3). Despite this situation, education holds power since technological developments go alongside training that can keep pace with the high-tech advances (4). Knowledge about high-tech advances is not about gender but knowledge of the work (6). One woman participant express:

*"Your knowledge is essential! Do not let the man decide what you should do! Since you work and learn you can handle everything"* (No 6, p. 282, lines 42-43)

Power through education was expressed to bring higher possibilities for equity (10):  
*"The lower the position, the greater the trouble will be."* (No 10, p. 642, lines 29-30)

It was considered important to have highly educated women on board to set good examples in the maritime sector (10):

*"There are some outstanding examples of female navigation pioneers. Currently, Taiwan's shipping industry has cultivated one female pilot and several female captains, which show that the gender bias towards women seafarers has attenuated."* (No 10, p. 642, line 44)

Universities were told to go ahead with gender policies and ahead to worldwide strategies. The universities were perceiving they were ahead of the professional life. Female students witnessed they got enrolled in university studies, they got their exam, they were strong in-person and skillful at the job but still not socially equal. It seemed, according to the participants in this study that there was a barrier between education and the labour market (10):

*"When applying for universities, I knew the navigation department from the website. I thought it very interesting and I could earn good salaries after graduation. However, after entering the department, I gradually knew that many shipping companies do not welcome women seafarers and it is very difficult for females to gain on-board internship opportunities. (Mary, female navigational student)" (No 10, p. 641, lines 4-7)*

Education could empower the maritime student and profession at conferences, training sessions, and in research delivered by the academic with a status of social equality. The MET curriculum should therefore provide women leadership courses and gender equality courses together with skills in cultural communication (6).

*"Be prepared and equipped with proper knowledge, skills and attitude. Enjoy the process of maritime journey itself because it brings enlightenment and fulfillment with every step towards embracing the experiences you are subjected into. Be a passionate reader and love your chosen career. Celebrate your achievements. Challenge yourself and do it." (No 6, p. 282, lines 63-67)*

Despite this, a study report on professional's training needs and gender issues are ranked at the very bottom (20). See figure 2.

## Figure 2

*Ranking of perceived training needs (Shah, Andrioti & Jensen, 2018)*

Topics	Ranking (%)	
	High importance	Low importance
<b>Health safety and risk management</b>	<b>83%</b>	
Working conditions on board	86	14
Health and safety at work	80	20
<b>Policy, rules and regulations</b>	<b>73%</b>	
Fitness evaluation and examination guidelines	86	14
Rules and regulations	84	16
National, international policies and networking	72	28
International health regulations	70	30
Monitoring and legislation implementation	70	30
Prevention programme planning	68	32
Health economics and system policies	60	40
<b>Maritime health services</b>	<b>72.5%</b>	
Onboard medicine	82	18
Early diagnosis and follow up	78	22
Maritime medicine emergencies	74	26
Organisation of services and resources	74	26
Evaluation of services	72	28
Disease diagnosis, prevention and reporting	72	28
Clinical registers	66	34
Electronic medical records	62	38
<b>Leadership and HR management</b>	<b>57.7%</b>	
Multicultural health	70	30
Tele-medical advice	66	34
Communication skills with patients	62	38
Leadership and HR management	60	40
Research methodology	56	44
Gender issues	32	68

HR – human resources

Note. Shah, B., Andrioti, D., & Jensen, O. C. (2018). Training needs among maritime professionals: A cross-sectional study. *International Maritime Health*, 69(2), 129–136. <https://doi.org/10.5603/IMH.2018.0019>, p. 131

Women worldwide do not have the same rights as men in education and far away in working life (7).

*"Regarding the discrimination, women usually do not have the equal rights for maritime education and training institutes in terms of nautical courses." (No 7, p. 187, lines 19-21)*

Females are willing to participate in deck work so that does not seem to be the problem. From a female student, we learn that women's physical ability is sufficient for the work at the deck (10):

*"I have been working onboard as an intern for one year and I feel good. During my internship, I have participated in deck work, including knocking off rust and paint. It was fun. (Linda, female intern student)"* (No 10, p. 642, lines 6-7)

Other professionals on board expressed their hope for a change towards social equality (10). The gender bias was seen as a construct whilst the work in the maritime companies was suitable for both gender in the newly emerged era of autonomous shipping (13):

*"The outstanding performance of female navigation pioneers will expand the seafaring path for their successors."* (No 10, p. 642, lines 9-10)

With this in mind, there were recommendations to move the social equality practices forward by new state policy concerning gender equality in university recruitment, although they also realised the university policy favour according to the market (23). In 2017 universities in China provided female and male cadet students different curricula and different tuition fees with benefits to the men. It was noted that the curricula and the tuition fee should be the same for both sexes, to reduce gender inequality (23).

*"The female cadets each pay 5,000RMB/p.a. doubling the amount paid by their male counterparts (2,500RMB/p.a.). These differentiated tuition fees are actually caused by the university's gendered expectation of the cadets regarding their career prospects after graduation. The 'boys' are expected and indeed required to go to sea after the training and they receive government subsidies (2,500 rmb/p.a.) that are designated to support seafarers training. They are therefore charged at 50% of the standard rate. The female cadets are charged at the full rate."* (No 23, p. 42, lines 94-101)

The university teachers justified higher tuition fees for women than for men with their responsibility to not make women enter the market (23):

*"We have to follow the demands of the market. We feel we have a big responsibility for these young women. We can't afford for them to take these very innovative courses but then find no jobs"* (No 23, p. 43, lines 23-25)

## 4.2 Rights

The facilitators of rights are amongst others, awareness of the regulations that exist to enhance equality practices. One of them is IMO and the UN sustainable development goals (SDG) that facilitate social equality. Also, human rights in their simplest form need to be enlightened. Cross-cultural training is something that should be more implemented in the shipping industry to reduce workplace accidents and to remove cultural barriers in form of language misunderstandings.

The barriers of rights are mainly physical ill-health where not only verbal harassment is present, but also practical. See table 3.

**Table 3***Overview of facilitators and barriers - Rights*

<i>Facilitators</i>	<i>Barriers</i>
<b>Rights</b>	
<ul style="list-style-type: none"> <li>• Equal treatment training in cultural and religion</li> <li>• Equal treatment education addressing people think differently on gender, on religion, on everything concerning life and attitudes</li> <li>• Acceptance on others changes people to the better around the world</li> <li>• Avoiding conflicts, peace through silence on politics and religious believes</li> <li>• Pedagogical strategies for intercultural Education</li> <li>• Awareness of human rights and the SDGs</li> <li>• Personal meetings and experience of social equality practice of professionals onboard</li> <li>• Demolishing stereotyped prejudices in all societies</li> <li>• Maritime-specific stress training units</li> <li>• Faith seems to be good for health</li> </ul>	<ul style="list-style-type: none"> <li>• The maritime industry is lacking behind regarding gender equality in training and practice</li> <li>• Hierarchal structures</li> <li>• Attitude problems between humans</li> <li>• Stereotypes</li> <li>• Behaviour onboard different than at shore</li> <li>• Lack of awareness of worldwide policies and regulations</li> <li>• Lack of political will</li> <li>• High stress levels onboard</li> <li>• Mental stress physical ill-health</li> <li>• Social isolation, consumerism, hedonism, unrealistic expectations</li> <li>• Depressions, anxiety, addictions suicide</li> <li>• Harassment</li> </ul>

*Note. An overview of facilitators and barriers in rights of equal treatment education-training and social equality practice upon maritime students and professionals*

#### 4.2.1 Equal treatment

The right to equal treatment has been expressed in the Bologna process regarding gender, religion, and political equal rights for students in education and training. The progress seems to lag in maritime education and training despite the improvements during the past 20 years.

*“I believe women are being treated biased in the maritime industry”*

6% strongly disagree 14,7% disagree 14,2% undecided 39,8% agree 25,4% Strongly agree (No 8, p. 170, lines 6-8) See table 5.

In a study with the female maritime student in 2018/2019 enrolled at 16 different education institutions in 13 countries, the study revealed an unchanging tendency concerning equal treatment (3). Equal treatment between maritime students and professionals of different religions has been expressed in the studies as connected to culture and the view of culture and religion, in turn, mirrors the view on the right to gender-equal treatment in hierarchal structures (8). In a study with maritime professionals working on-board at a cruise ship, they discussed that a person can be treated differently because of gender and they can be treated differently because of religion. This is an attitude problem focusing on differences in general between humans (18).

*“I believe there are stereotyped negative thoughts about women working in the maritime industry”* 6,5% Strongly disagree 13,2% disagree 14,4% undecided 42,8% agree 23,1% strongly agree (No 8, p. 170, lines 8-11) See table 5.

They continued to stress the importance of equal treatment education and training to solve this attitude problem. Equal treatment education and training were suggested to address that people think differently on gender, on religion, on everything concerning life and attitudes.

Understanding what other people think and what attitudes is there around the globe in a different culture and religious settings will change the student or professional involved in maritime equal treatment education and training. It will open the eyes of the participant and make the person deal with others from different cultures in a better way and prosper in the maritime sector (18, 12, 23). The research articles provide and insight that other rules seem to rule at sea than in a shore reflected in the quote below. The view of women was different when onboard the ship compared to a shore:

*"When I had sex with a prostitute [...] as a seafarer I think it is okay, as long as you don't do it back home in the Philippines.[...] Well, being a seafarer I think is different. I don't know. We work very hard so it's understandable that we will do it, and in our case, we don't have our wives or girlfriends with us, so maybe, we are excluded from rules, I don't know. Maybe it is a sin but God maybe will understand us. (Roman Catholic, Filipino, Rating)" (No 18, p. 300, lines 17-22)*

Avoiding conflicts in the area of the right to equal treatment was the guiding star for onboard. When cultural differences were recognised the goal was to maintain peace working and socialising onboard and they kept for instance religious believes and practice for themselves to avoid conflicts with others (12, 18).

*Once you are on board, people think differently. Say with food, whatever is prepared by the galley staff, you just eat it. We think that we are here to work and not to show everyone that we are Roman Catholics, or Muslims. No. We are here to earn money for our families. (No 18, p. 300. Row 3-6)*

Workers desired to keep religion private on board to avoid interpersonal conflicts. Seafarer took personal responsibility to not awake bad working environment, so they don't talk about religious believes or politics:

*[...] religion, politics, they are the two subjects you actually never should discuss on board. [...] Believe me, there will be no resolution and you will just end up angry and frustrated. [...] Just an unspoken rule. [...] I don't explicitly tell every- one what not to talk about. I don't do that. And I think majority of seafarers, if not all, they know that religion is a contentious topic so I don't think I need to tell them about it. (Lutheran Church, Swedish, Senior Officer)" (No 18, p. 297, lines 37-38, p. 298, lines 1-4)*

Develop pedagogical strategies for intercultural education was expressed as important for the environment onboard and intercultural communication training was suggested onboard ships improve social equality practices (22). Maritime education and training institutions are involved in the United Nations strive to promote the right to gender equality and women's empowerment in shipping (5) but with a gap for implementation of policies into practice in the maritime industry (3). Regarding the right to gender equality, it's getting better with the promotion of gender policies, it has changed with education, knowledge, and generation changes (6-8) although women expressed the right to equal treatment in social equality practices was not yet reached (6). They had to justify their existence in the maritime industry:

*"You have to be better, faster and stronger than the boys to be considered in this Industry" (No 6, p. 282, lien 56)*

Intercultural leadership training was only offered at one university (12).

#### 4.2.2 Awareness

Regarding awareness of the right to equal social equality practices for maritime students and professionals, much has been done by the educational institutions to minimise inequality but despite this the inequality remains. Researchers stressed the importance of effective gender and equality policies and programmes and more inclusive awareness pieces of training of professionals involved in the maritime administrations, in international organizations and agencies (3). The lack of awareness of worldwide policies and regulations and due to the lack of political will the inequality in social equality practices continue despite training and education with increased awareness (3, 4):

Despite increasing awareness, the gender barrier continues both in the educational and professional sector (3). Women professionals in the maritime industry had to be aware of their rights and had to fight for them. Personal contacts were of great importance (6):

*"you must know your rights and must know the right people who can help you when things go wrong."* (No 6, p. 282, lines 7-8)

Awareness of human rights, of the sustainable development goals, had to start from an early age. In a study about awareness on gender equality in Taiwanese society, the awareness had increased and this was expressed as an awakening of gender-equality consciousness for women seafarers (10). One woman female chief officer expressed:

*"At first, my family knew little about seafaring; they thought I would work on fishing boats, so they were very opposed to my decision. In my sophomore year, I took some photos to share with my family and explained my work and employment conditions to them. When I worked as an intern on board, they were less opposed to my choice. (Kimberly, female chief officer)"* (No 10, p. 640, lines 41-44)

This showed how the right to social equality practice for maritime students and professionals in the maritime industry was related to human progress, sustainable development goals, multicultural awareness, and recognition of human rights (7):

*"The problem of gender equality in the maritime field represents a challenge for obtaining human progress, economic development, respect, multiculturalism awareness and recognition of human rights."* (No 7, p. 188, lines 19-2)

Awareness might come with personal meetings and positive personal experiences of social equality practice of women professionals onboard. Women should become the sector's dignitaries. This is a further path for women to be legitimate and demolish the negative thoughts of colleagues. Equal approaches should be provided to women both in education, legally, and in work environments. It will be an important awareness factor in demolishing stereotyped prejudices in all societies (8).

#### 4.2.3 Health and safety

Maritime-specific stress training units were only provided at 1 of 5 universities (12). Social equality treatment in terms of stress management is an area for improvement according to the research. A study demonstrates the high-stress level for ship's officers during the ship's operation, regardless of their age. According to the European ship's officers mental stress was due to high responsibilities (82.0%), administrative tasks (81.1%), and lack of qualification of

other seafarers (64.8%). The Europeans were significantly more likely to experience mental stress on board than the Southeast Asians (74.2% vs. 56.3%). The Southeast Asians were more likely to become physically stressed. The Southeast Asian seafarers felt lonely on board (43.1%) compared to 26.2% of the Europeans. The reason for this was lack of time (12). Another study highlighted the situation for young men in general. It is well known that young men are a targeted group for mental stress physical ill-health. This situation has described a threat to a healthy working environment and safety onboard: Regarding safety on-board, a study from Croatia stressed the importance of cross-cultural training to reduce misunderstanding and treats to safety onboard (9). Not only cross-cultural training is suggested but also education and knowledgeable women and men leaders open to comfort and care for good health and safety onboard (17). Social isolation, consumerism, hedonism, and unrealistic expectations were described as the vulnerable part of the young men's frustrations, paving the way for depression, anxiety, addictions, and even suicide. Continuous education of the whole personnel and a "healthy ship" approach was suggested with leaders able to better recognise crew members' needs, mental health problems, nutrition status, physical activity. Better identification of those at risk together with the development of the atmosphere of confidence that those seeking help would get it from responsible officers and crew members was suggested (17). Prayer and other religious practices were described to cope with stress and boredom on board. One seafarer described how meditation helped him to deal with stress saying (18):

*"We seafarers, too much worry, all the time, so Buddha says be calm and don't stress, so that is why we have meditation. It helps. (Buddhist, Chinese, Officer)"* (No 18, p. 294, lines 37-38 p. 295, lines 1-4)

Faith was a health factor in the closed onboard environment. One seafarer explained how his work colleagues were difficult to get along with and he missed his family. In this circumstance, he found his belief in a God of great help. He said:

*"When I was a cadet. [...] I really felt the pains of homesickness. And it was made worse by your inconsiderate workmates. Then it happened again when I was already a third mate. Our captain was a genuine pain-in-the-ass. That time I really wanted to sign off at once. [...] When that happened, I was on my own and God was just there, and he's the only one you could talk to. (Roman Catholic, Filipino, Officer.)"* (No 18, p. 294, lines 15-25)

Faith seems to be good for personal health although from the broader society's view it was combined with cultural issues related to unequal treatment, which in turn is not good for the health of the person and a sustainable future of maritime professionals (17, 18).

Male seafarers experienced harassment for a variety of reasons but women, although to some extent good for the working environment onboard suffered more harassment (7). They did not get rest time when they had their monthly period with pain or when they were pregnant. They were seen as low-level women in some cultures when they got sunburned (6). Individuals need different opportunities, light skin people need sunscreen, women need time for hygienic procedures, elderly men might have incontinence problems. The onboard working and social life need to be individualized and that is equal treatment:

*"....and limited accesses to facilities and equipment, comparing with male seafarers. For the bullying or harassment issues, they may particularly happen seriously and frequently at sea as seafarers are far away from their family, friends and other sources of support."* (No 7, p. 187, lines 26-28)

Some special concerns for women seafarers, such as maternity rights, have been drawn attention recently. In the Maritime Labour Convention, the legal instrument is stated by the International Labour Organisation (7).

### 4.3 Opportunities

One important facilitator would be cultural leadership training at the academy. It is recommended that education is equal worldwide so that leadership positions could be practiced equally. This is also beneficial since women leaders tend to empower other women leaders and therefore connecting their skills.

The greatest barrier in terms of opportunities is that discrimination persists despite the regulations that are in force, but that the regulations think it is a practical problem rather than law. Another barrier that is mentioned is that women who are leaders become like men so that the gender inequalities can be rubbed out. See table 4.

**Table 4**  
*Overview of facilitators and barriers - Opportunities*

<i>Facilitators</i>	<i>Barriers</i>
<b>Opportunities</b>	
<ul style="list-style-type: none"> <li>• Training in specific practical skills</li> <li>• The same policy worldwide recommended social equality treatment and leadership positions regardless of sex</li> <li>• Gender-equality awareness</li> <li>• Gender shipping benchmarking company</li> <li>• Legal regulations prevent discrimination</li> <li>• Cultural leadership training at universities</li> <li>• Can be an amazing personal experience</li> <li>• Challenge stereotypes</li> <li>• Cultural, diversity, and gender policy awareness included in the curriculum in maritime education</li> <li>• Women have a career in education programmes</li> <li>• Lifelong learning</li> </ul>	<ul style="list-style-type: none"> <li>• Discrimination persists despite legal regulations and policies</li> <li>• Lack of job opportunities for women and elderly men</li> <li>• The maritime industry has developed its cultural norms in a different part of the world</li> <li>• The maritime industry mirrors social inequality in the world</li> <li>• Women leaders become like men</li> <li>• Lack of unity in education and policies</li> <li>• Lack of comprehensive and uniform global standards for MET</li> <li>• Lack of flexible leadership and management</li> <li>• Leaders and managers with a lack of education and skills</li> <li>• Lack of retention of women in the maritime sector due to sexual harassment, unwanted physical contact, negative attitudes</li> <li>• Lack of awareness in the education programme of the profound input the shipping industry has on the education</li> <li>• Status quo preferred</li> <li>• Recruitment is preferred and salary is better for young men</li> </ul>

*Note. An overview of facilitators and barriers in opportunities of equal treatment education-training and social equality practice upon maritime students and professionals*



### 4.3.1 Leadership

Education was the facilitator for social equality treatment of the maritime industry for women maritime professionals. Women undertaking education on specific practical skills had a 60% higher chance to become maritime officers than women without specific training on maritime ships (4). The same policies and education worldwide were recommended to reach social equality treatment of maritime professionals in leadership positions (3). If conservative thinking could be overcome men and women could work on equal footing as leaders in a purely male-dominated profession. The recruitment market could go beyond skepticism about women leaders on board (5). Women leaders have proven they facilitate teamwork beneficial to the entire crew (6):

*"Don't let men intimidate you because they are men. Work with them and show your worth as part of the team"* (No 6, p. 282, lines 10-11)

Women leaders are known to empower other women leaders, this means to integrate with others and connect the different skills and ideas. This can develop the maritime industry working environment (6) with the implementation of gender policies in the organizational culture:

*"The concept of gendering shipping defines companies who communicate actively the voluntary implementation of gender policies in their organizational culture. The implementation of gender policies occurs before regulations on the topic might shift the voluntary approach in one more or less recommended or mandatory approach."* (No 7, p. 188, lines 11-13)

Today a battle is ongoing between professionals with gender-equality awareness and other professionals with the shipping market mechanism in mind. The market power wishes to stop women leaders in the maritime industry. The shipping market professionals must stop treating women seafarers as troublemakers or secondary choices. When this happens a true occupational social gender equality treatment can be achieved in the seafaring profession (10). The term "gendering shipping" is a trend in benchmarking maritime companies that assign a socially responsible attitude in building a gender-equal organizational culture both on board the ships and on shore inside the shipping company (7). Discrimination was according to the researchers tried to be prevented by legal regulations. They stated it was a practice problem rather than law (8) although the maritime professionals in a study thought the legal arrangements in the maritime sector was made for men:

*"I believe that different legal arrangements have been made for men and women employees in the maritime sector" 18,4% strongly disagree 30,8% disagree 29,1% undecided 13,4% agree 8,2% strongly agree."* (Nr 8 p. 170, lines 20-23) See table 5.

Taiwanese women seafarers' job opportunities were described as significantly influenced by the international seafaring market and particularly on the labour market in China:

*"Currently there are 38 women seafarers in our fleet and the number of young Taiwanese male seafarers is less than that of women seafarers. Where have the male graduates of your college gone? We have to depend more on Chinese seafarers and entrust all the oil tankers to foreign ship management companies. (Male, Director of shipping company)"* (No 10, p. 643, lines 23-28)

The maritime industry in Asia had developed its own culture which denied or precluded women leaders (23). The market in Taiwan employed women and elderly male leaders at lower incomes in the coastal sectors and they recruited young men to the ocean-going ship's market with a higher salary (10):

*"Taiwanese shipping companies, which operate domestic or near-sea routes, provide seafarers with far lower salaries and benefits in comparison to those provided by the shipping companies that operate oceangoing routes. As a result, young male seafarers are not interested in these shipping companies and most of the seafarers serving on such routes are seniors or females."* (No 10, p. 643, lines 33-37)

The maritime sector seems hence to mirror the social inequality treatment of the women of the world regarding salary and positions.

*"Besides me and the chief officer (who will retire soon), the other six persons in our bridge team on the ship are all female, including a second officer, a third officer, and four deck cadets. I think women seafarers are great! I would also like to advise the company to promote the female chief officer. (Male, the captain of passenger ship)"* No 10, p. 643, lines 40-42)

Another strategy to deal with women leaders was to rub out gender inequalities by making women "become" men in terms of rubbing out the gender attributes and hence instead reinforce gender discrimination (1). Women leaders were (de-)constructed in the maritime academy. In a male-dominated occupation such as seafaring, the organizational practices of required uniforms and prescribed haircuts rub out gender distinction by routinely denying feminine qualities (1). Another view was presented by other authors; instead of rubbing out the gender, they suggested better understanding through in-service training, online, ashore, on-ship, company checks (21). Many nationalities are dissatisfied with the working environment and lack inclusive leadership style (40, 21). See table 5.

**Table 5**  
*Leadership style (Theotokas & Progoulaki, 2005)*

Leadership styles	Seafarers (%)
1. Despotic	13
2. Centralized	25
3. Participative	34
4. Democratic	27
Total*	99

\* 1 missing value

*Note. Theotokas, I., & Progoulaki, M. (2005). Greek seafarers' attitude on the issue of a multicultural working environment. 1st International Symposium on Ship Operations, Management and Economics 2005, 310–323, p. 8*

The diversity of management and policy is a social inequality treatment issue (11). Cultural leadership training is suggested by universities (12). However, the most important barrier to leadership opportunities overall was the lack of unity of education and policies. The Maritime Education and Training (MET) had to constantly evolve to meet changing industry and social demands that were influenced by the development of technology, changes in legislation, security requirements, and environmental factors (14). International Maritime Organisation (IMO) play an active role in prescribing the competencies and standards for training and certification of seafarers and leaders through various conventions and national legislations.

The shipping world still needs to implement a comprehensive and uniform global standard for MET (14).

Out of 100 crew taking part in a test including decision making in a more flexible leadership and management, they became more effective in their work. The leaders stated that operational and social problems onboard often were related to lack of education and skills. With this in mind it's time to reflect on leadership and management, priorities and development of the maritime industry for the future, and how to reach the SDG 5 related to equality and equity (21).

### 4.3.2 Retention

Social equality treatment means retention in the workplace. Education institutions retain educators in an equal manner but women do not retain in the maritime industry due to female awareness of difficulties of working life on board including fear of sexual harassment, sexual abuse and unwanted physical contact, negative attitude of recruitment companies to women onboard (5).

*"Maritime companies would probably need to start socially responsible campaigns first with their own employees, by removing gender barriers at women seafarer employment and glass ceiling barriers after employment of female."* (No 7, p. 178, lines 12-15)

Gender inequality is profound in the maritime professional sector and retention is, therefore, a problem (3).

### 4.3.3 Recruitment

Barriers and facilitating factors for social equality treatment in recruitment were the area of origin. Comparing European to non-European countries there was significantly lower recruitment of females in European countries (3).

*"there is still a small percentage of them that begin and complete their training in MET institutions during the period evaluated and that the situation does not improve over time"* (No 3, p. 149, lines 12-14)

This might be due to early childhood influences of what professions is suitable for a woman (3).

*"Beginning promotion at university level might be too late"* (No 3, p. 157, lines 7-8)

High education level was the ultimate best facilitator for employment in the maritime industry. By undertaking on board training at higher standards there was a 40% increase in the chances of employment (4). However, one must be aware the study programmes are structured according to the needs in the shipping industry:

*"Study programs are structured according with the requirements of the present regulations and with the shipping industry needs"* (No 4, p. 174, lines 7-9)

Women were described as less recruited because the pre-justice and conservative thoughts of employers that women will get pregnant and parental leave (6). One woman seafarer state:

*"It can be an amazing experience if you get a supportive and good crew, if you want to have a family you can only do it when you are young, or when kids have grown up."* (No 6, p. 282, lines 27-28)

Consequently, men were more popular to recruit (5):

*"I believe men are more favoured in recruitment in the maritime sector"*  
3,5% strongly disagree 13,9% disagree 15,4% undecided 41,3 % agree 25,9% Strongly agree" (No 8, p. 170, lines 11-13) See table 5.

*"The perception that men were preferred in recruitment in the maritime sector was higher among women (262.47) than men (190.38)"*  
(No 8, p. 171, lines 13-16)

It was concluded to be hard to breach the status quo. The resistance does not come only from men but also women themselves. They tend not to seek work where there were relatively few women".

*"Negative stereotypes were behind the reluctance supporting women candidates for same position."* (No 13, p. 14, lines 9-10)

How hard it is to challenge status stereotypes has been expressed in a study from China (10).

*It is extremely hard for our female students to locate jobs with shipping companies. In 2000, when we recruited the first cohort, these girls and the University received a good deal of media attention. But the time when they were graduated, in 2004, I realised it seemed so hard, almost impossible to break the old tradition. People were talking high sounding words. But, they closed their doors to our female students.' (Int. 10)." (No 23, p. 45, lines 84-90)*

#### **4.3.4 Career development**

Facilitators and barriers to social equal treatment in career development for maritime students and professionals were described in several studies. The main facilitating factor was having a higher education degree. A practical career should not lead to becoming land-based university theoretical lecturer or PhDs as was most often the case, but rather it should be to take part in lifelong education and in-service trainer's courses. Taking part in such courses should lead to career development. The career development should preferably include practical training. The students' education of 6-12 months onboard ships was seen as uttermost important as it educated the coming workforce. With specific practical training onboard, it was a 40% improved employment rate for all maritime students and a 60% higher chance for female maritime students to become officers after graduation.

*"Training the trainers that are teaching maritime related disciplines is essential for achieving the required quality standards and to transmit to the students the proper level of knowledge and skills required by the competencies that they have to achieve during the our year of academic studies."* (No 4, p. 174, lines 25-30)

The improvement in Swedish maritime education has been high since cultural, diversity, and gender policy awareness training was included in the curriculum. A world maritime university conference has been held on the topic and the gender balance in the faculty has improved, so

also dissertations, and hence, there is a career path for women in the leadership and education sector. The new teachers are women (2):

*"Progress has been made towards the introduction of gender perspective in the form of cultural, diversity and gender policy awareness training in the curriculum. However, the number of courses which include it is still low."* (No 2, p. 586, lines 73-78)

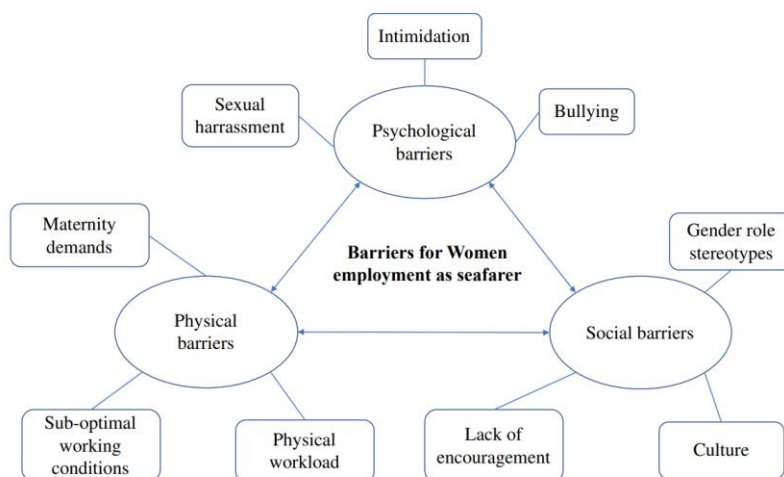
This is one of the reasons why the great majority of women maritime students distinguished themselves as future lecturers. The university's administration offered them the opportunity to teach various maritime courses. This is why the young assistants in the universities are females (15). If women show leadership and management skills they can become leaders in the maritime industry (17).

*"Since its early years of operations the University has made a significant contribution to the maritime transport sector, by increasing the number of female graduates from 2.85% to 19.7%, ensuring equal access to men and women to education and training programmes and providing highly qualified maritime education and training to women from all regions of the world to serve in the shipping industry."* (No 2, p. 586, lines 66-73)

"The findings also show that traditional expectations towards work roles concerning women's efficacy for maritime careers still persist. In general, barriers exist in every aspect of work in their career practice for women onboard the merchant ships." No 13, p. 14, lines 15-17. See figure 3.

### Figure 3

*Schematic map of the barriers to women employment in maritime careers (Kim, Sharma, Gausdal & Chae, 2019)*



Note. Kim, T.-E., Sharma, A., Gausdal, A. H., & Chae, C.-J. (2019). Impact of automation technology on gender parity in maritime industry. *WMU Journal of Maritime Affairs*, 18(4), 579–593. <https://doi.org/10.1007/s13437-019-00176-w>, p. 12

Life long learning had to continue for career development with masters degree to manage positions as chef officer, chef engener and masters:

*"The academic programs for future marine professionals in CMU respond to the recent needs of maritime industry, including master and Ph.D. studies. We have to underline that in*

*accordance with the last Romanian Naval Authority requirements, maritime officers must undertake a dedicated Master Course in Maritime Transport in order to accede to the managerial position on board ships (Chief, Officer, Chief Engineer and Master). This means that the overall time spent in university by a maritime officer is of 5½ years. In order to comply with requests of partner shipping, crewing and manning companies, CMU is also dedicated to the Long Life Learning concept, offering different short time courses for the already certified."* (No 4, p. 174, lines 31-44)

Further facilitating factors for career development to eliminate the glass ceiling and sticky floors were to (6): Join the union, join a network of female seafarers (like WISTA) and seek out both female and male mentors:

*"In conclusion, it is impossible to eliminate the facilitator of glass ceilings and sticky floors for Taiwanese women in seafaring using only political forces."* (No 10, p. 645, lines 42-43)

As it is now barriers exists for women in maritime careers at both side of the dyads (i.e., employees and employers), and can be broadly grouped into physical, psychological and social barriers (13).

*"The findings also show that traditional expectations towards work roles concerning women's efficacy for maritime careers still persist. In general, barriers exist in every aspect of work in their career practice for women onboard the merchant ships."* (No 13, p. 14, lines 15-17)

The closed world onboard of a ship will be open when the autonomous technology will change the working environment and allow women, the elderly, young, and with any nationality and religion to work with autonomous technology beneficial for the working environment. That will according to the researchers be the end of the "young man" dominated maritime industry (13).

*"These new job demands will likely create new roles and career opportunities in this industry. Several barriers as described above can be predicted to be removed with implementation of autonomy technology, which leads to the assumptions by several informants that the changes with regards to autonomy will lower the barriers of employment opportunities for women seafarers in the merchant shipping industry."* (No 13, p. 14, lines 20-24)

The reasons for this assumption can be summarized into autonomous shipping that will create new functions that don't carry with them a history of male occupation and will implement automation technology potentially removing the physical barriers and male-oriented working culture and condition (13).

*"the respondents concluded that, the adoption of autonomy will improve the quality of seafaring jobs and aiding elimination of several key barriers for women participation in the maritime industry, which likely increase the possibilities for work-family integration, improve the working environment and flexibility, and reduce the level of physical demanding jobs and risk exposure."* (No 13, p. 16, lines 10-14)

The researchers foresee that autonotation technology implementation opportunities for women seafarers/operators in the maritime shipping industry will solve lots of problems in terms of inequality in maritime career development (13).

Another facilitating factor for women's career development was told to be the look and fair skin is a factor of beauty and status and told to be widely accepted within the maritime industry (23).

*"Fair skin colour is considered beautiful and an important attribute of femininity. This is widely accepted"* (No 23, p. 43, lines 120-121)

#### **4.3.5 Salary**

Salary is a barrier to women choosing a career as a maritime professional. Education is costly and salary lower than for men (7):

*"Even women graduating from nautical courses successfully may still suffer from the bias from shipping companies who are reluctant to employ women seafarers. Once women are employed to work on board, they still face the unequal treatment, such as lower payment"* (No 7, p. 187, lines 23-26)

There seems to be different remuneration for men and women employees in the maritime industry (6):

*"Have an accomplished shore career and some finances behind you first before thinking of going to sea. I went to sea after a nursing career of 15 years - at the age of 36. Now qualified as Master Mariner Foreign-going and currently sailing as Chief Officer, worldwide. I have still financial depth of 50'000.- from my study time as I was a self-funded student without sponsorship or scholarship all the way to Master."* (No 6, p. 282, lines 19-22)

## 5. DISCUSSION

The study aimed to identify the facilitators and barriers when it comes to equal treatment within the maritime industry. There are still barriers to overcome in the field, but there have also been improvements over time, especially when it comes to gender equality awareness.

### 5.1 Method discussion

An integrative literature review makes a broader search possible when there is limited research within the area. By including articles using qualitative, quantitative, and mixed methods the literature review was strengthened by including articles depending on content and not excluding them concerning the method. The integrative method enables the adoption of a holistic and comprehensive understanding of the result and strengthens the credibility of the findings. In this study, the integrative method has been time-consuming due to a larger range of articles to assess and analyse. To combine different sources of data is complex and to evaluate the progression that led to a result the user must know qualitative, quantitative, and mixed methods research to prevent bias. Application and transfer between report and data may have been affected by the difference. By those who performed the original research, ethics has been considered being used acceptably. This review has been done with as much quality in each step as possible and with consideration of ethical aspects.

### 5.2 Status

The results in this thesis showed that status for maritime students and professionals is related to equal treatment education-training and social equality practice. There is a complex situation regarding the economic aspects, because the company states that there are higher costs to hire women in the industry due to those women who experience pregnancy and maternity leave. Along this, there are high requirements when it comes to technology within the field, and it has shown that men tend to overtake possibilities on the topic. This is in line with IMO's motto, as they stand for progress on a global level. IMO points out that women as leaders would lead to higher opportunities for solving social issues. Also, women are more reliable on solving conflicts in the workplace. Countries with more gender equality leads to economic growth and that is what companies aim for in the maritime sector (Joy et al., 2007) . From our perspective it is vital for companies to hire women because in a long-term perspective woman within the organisation will contribute to a better economic growth and for the global perspective contribute to sustainability (United Nations, 2020a) . In fact, it seems to be an old hierarchy in recruitment in shipping which means that the men obtain higher status. Women are skilled leaders, and they get excused simply because of their gender. It seems to be a trend in this literature review that gender equality is in focus in the education but it ends abruptly when it reaches the labour market.

The results almost exclusively relates to gender equality which is understandably the most researched question in the maritime sector when it comes to equality because the maritime sector is dominated by men and there are challenges for women when it comes to gender equality. According to a study by Kitada (2013), both male and female seafarers agree that masculine norms and values is part of the onboard culture and that the masculine values exist both during work and of work duties (Momoko Kitada, 2013). This is one example why there is a challenge to achieve gender equality in the maritime industry.

One study told that the body matters when it comes to contracting of women in the maritime industry and that by the fact that they were women they were neglected in recruitment (M



Kitada & Langaker, 2017). But there is no reason to exclude women for other reasons than for men which should be the level of qualifications (Hanzu-Pazara & Arsenie, 2010).

### **5.3 Rights**

The importance of equality is a widespread topic in most organizations and within different industries because work environment is regulated. The work environment conditions could be different depending on how the organization is built. One example is the number of employees and organizations with less than 25 employees does not have requirements for action plans regarding equal treatment and equal salaries (Prevent, 2016). In the maritime sector the key to cultural and economic growth is to have the same opportunities regardless sex, gender, religion, ethnicity, equality and age. This implies both physical, psychological and social aspects. The attitudes and values among seafarers and seafarer's students are important for the health when working, but also for the companies' future growth and thereby the industries' development. At Chalmers University of Technology, the work with equality is a central part of the education including equality values within the maritime institutions. The result of this study suggests that managing modern technology could become a possibility for equality and improved working environment (Kim, Sharma, Gausdal, & Chae, 2019). In contrast Yemao Man (2018) concludes a complex system might not provide opportunities for any human to cope with the technologies (Man et al., 2018). Regarding health and safety of maritime students and professionals' onboard accidents occur caused to human errors and the errors occur due to lack of communication and coordination (Rehman & Timraz, 2017). This highlight the importance of multicultural awareness to be able to operate with safety during ship operation.

The results in this thesis show that regarding work environment rights for maritime students and professionals was related to equal treatment education-training and social equality practice. A facilitating factor for peace at the workplace onboard and an unspoken role was to not discuss politics or religion to avoid interpersonal conflicts. For instance, faith was a positive factor, and to pray was important, isolation led to frustration and paved the way for deprecation and frustration. This led to the understanding of the importance of awareness sessions in education and training including recognition of human rights and multicultural awareness. One example from ILO was that the term seaman has been exchanged to the term seafarer (Momoko Kitada, 2013). Additionally, ILO highlights the recruitment and retention of women seafarers. Women have experienced harassment which made them withdraw from the maritime sector. Hence the equal treatment is an essential way of dealing with people in the maritime community for a healthy work environment. Equal treatment is also one of the first building blocks in achieving peace on a global stage. Peace and collaboration between nations will result in the development and preservation of the environment therefore equal treatment is necessary to obtain humanity at a desired level (United Nations, 2021)

### **5.4 Opportunities**

The results in this thesis show that opportunities for maritime students and professionals are related to equal treatment education and training and social equality practice. One must be aware that study programs are structured for the shipping industry, also according to STCW. Though women often graduate from their maritime education and training institutions with excellent results, their job applications are sometimes systematically turned down. Finding female workers at sea is still rare, but an increasing number of women are confronting prejudice instead of becoming valuable members of ship crews. The shipping market does not implement the policies that are used in the MET and consequently, the opportunities for the elderly and women who are viewed as less strong are neglected and men are therefore

preferred. Shipping is an international industry, and it is not uncommon to have a crew composed of multinationals. This microcosm might make the practice and oversight of human equality difficult. There are a lot of aspects to look at. Sex and gender are two important aspects since it is more men than women working at sea. Also, there should be a natural tendency or approach toward a person regardless of gender. The fact that a ship's crew is composed of different nationalities covers up the aspects of religion, ethnicity, and equality. People working at sea are likely to be older than 30 and not younger. This is rising the question about age among seafarers. There should be the same output for a 30-year-old and a 50-year-old to get a chance to perform his or her task onboard. This leads to relatively few women in leadership positions. This can be related to a study about the occipital culture at sea where masculine norms and values effect women's behaviour and attitudes (Momoko Kitada, 2013). In the maritime sector, there is a long-standing culture with male-dominated workplaces that are slowly changing to involve more females to the industry. This process is relatively new compared to other labour markets. Today it becomes more and more important to encourage women to join the shipping industry. Equal treatment training is therefore implemented both in education and in the profession. But all countries do not have the same attitudes towards equality and the question arises as to why this barrier exists. Other results revealed that in line with Momoko Kitada (2013) women behaved and adopted the same attitudes as the men as a strategy to avoid gender-related problems. Within shipping today, there is not enough systematic work at all workplaces to fill the gap of equal treatment. If the workplace does not feel safe and welcoming, it is difficult to perform the duties in the best possible way.

Hanzu and Arsenie (2010) have written about new challenges in education and it is important to realise that education is in line with the industry. One example of how the industry effect education is showed in other results that in China the university closes the door for female students by rising the study fee for women compared to the men (Hanzu-Pazara & Arsenie, 2010). In contrast Sweden has been highlighted as an example because cultural diversity and gender equality training were included in the curriculum. In our results, women are considered costly because they are higher educated and tend to leave for maternity leave. When it comes to recruitment and retention the opportunities for women our result showed the career path for women comes through leadership in education (International Labour Organization, 2019b). The men witness that women have the same skill and ability which mean power through education is the only way forward. The findings from this study reveal measures to improve equality in maritime education-training and help to address the directions of the International maritime business on women empowerment and Sustainable Development Goal 5 (United Nations, 2020a). The perspective of equality in the maritime industry reflects an international view of equality including status for women, opportunity through educate and rights to take part and develop in the labour market. Regarding recruitment our study shows the importance of motivating women as early as possible to evolve in the maritime industry (Doubbia-Henry, 2019). Specifically, the SDG: s emphasizes to end all forms of discrimination and to have equal opportunities at all levels. From the findings in this study, it seems a long way before this becomes a reality within the shipping industry.

## **6. CONCLUSION**

The educational institutions make way for a change of attitudes among both students and professionals that can improve social equality practices in the maritime sector. There is hope for the future through education and training and with the individual will to change attitudes. Also, worldwide policies can pave the way for a change that will take time. Maybe there will open opportunities with new systems as autonomous shipping.

The barrier between theory and practice for maritime students and professionals is due to a will to sustain systems. It is a matter of political power, job opportunities, control over transport, and ownership of the companies. The barriers for opportunities in equality are physical, psychological, and social that effect the working environment. Actions through education to improve equality practice and intercultural understanding do not seem to reach practice and the labour market. It is a long way to reach equality for maritime students and professionals therefore equality treatment training and social equality practice must be empathized.

### **6.1 Recommendations and further research**

Training ashore, at ships, and face to face is suggested for leaders, managers, maritime students, and professionals based on barriers identified in this study. It is suggested to expand these pieces of training and including the leaders with structured company audits on equality. Universities are encouraged to continue the good work that is already done, but it could be implemented on a more practical level.

It is not sufficient only with training. A worldwide resistance exists and there is a need for more policies on a regulatory level. It is beneficial with a company's voluntary measures, but it is still not enough to maintain equality on all levels. Because it is the market that controls the situation, it cannot be equal only by workplace training. It is like a chain from education to profession to the community and lastly on a global level. The chain needs to be connected already in maritime education for the chain to last.

Our recommendation for further research is on the benefits of equality and gender diversity in maritime education and training and profession to improve the work environment, competitiveness, efficiency, and prosperity in the maritime companies. The benefits need to be known so that the industry could aim for the goals. The benefits that people are aware of today are far from all the benefits that could be gained.

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Note. \*Articles included in the result



## APPENDIX I

### JBI CRITICAL APPRAISAL CHECKLIST FOR CASE CONTROL STUDIES

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_ Record Number \_\_\_\_\_

	Yes	No	Unclear	Not applicable
1. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were cases and controls matched appropriately?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were the same criteria used for identification of cases and controls?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Was exposure measured in a standard, valid and reliable way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was exposure measured in the same way for cases and controls?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were confounding factors identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were strategies to deal with confounding factors stated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the exposure period of interest long enough to be meaningful?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Was appropriate statistical analysis used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

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## APPENDIX II

### JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Author \_\_\_\_\_ Year \_\_\_\_\_ Record Number \_\_\_\_\_

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

## APPENDIX III

### Included articles

Source No 1	
Reference (APA):	Acejo, I. L., & Abila, S. S. (2016). Rubbing out gender: women and merchant ships. <i>Journal of Organizational Ethnography</i> , 5(2), 123–138. <a href="https://doi.org/10.1108/JOE-01-2016-0004">https://doi.org/10.1108/JOE-01-2016-0004</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> The purpose of this paper is to show how gender differences are rubbed out and simultaneously reinforced in intentional and unintentional ways. It will do this by exploring the experiences of female cadets/seafarers.</p> <p><b>Method:</b> This paper is drawn from two independent PhD theses, where one of the theses conducted ethnographic fieldwork aboard a container ship in 2009. The other thesis used a case study research design of cadetship programmes in the Philippines using structured interviews, observations with the aid of fieldnotes and documentary analysis of records from seven maritime schools and cadetship programmes of ship-owners.</p> <p><b>Conclusion:</b> This paper provides empirical evidence and insights on the ambivalence of integrating women in the seafaring profession owing to official and unofficial policies and training that intentionally and unintentionally construct women as unfit to work as sea-based professionals. © 2016, © Emerald Group Publishing Limited.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (rights)
Source No 2	
Reference (APA):	Romero Lares, M. C. (2017). A Case Study on Gender Equality and Women's Empowerment Policies Developed by the World Maritime University for the Maritime Transport Sector. <i>TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation</i> , 11(4), 583–587. <a href="https://doi.org/10.12716/1001.11.04.02">https://doi.org/10.12716/1001.11.04.02</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> This paper aims to determine the effectiveness and impact of current gender equality policies, regulations and programmes in the maritime educational sector.</p> <p><b>Method:</b> Case study</p> <p><b>Conclusion:</b> gender barrier in maritime education, which is then transferred to the professional sector, and the need to foster more inclusive gender policies in MET institutions.</p>
Quality according to JBI critical appraisal	Medium

checklist for qualitative research:	
Relevance for bachelor thesis:	High (rights)

Source No 3	
Reference (APA):	Barahona-Fuentes, C., Castells-Sanabra, M., Ordás, S., & Torralbo, J. (2020). Female figures in maritime education and training institutions between 2009 and 2018: analysing possible impacts of gender policies. <i>WMU Journal of Maritime Affairs</i> , 19(1), 143–158. <a href="https://doi.org/10.1007/s13437-019-00190-y">https://doi.org/10.1007/s13437-019-00190-y</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> Analysis of female students in maritime education and training (MET) institutions over a decade (2009–2018) with the aim to analyse the possible impact of the gender equality policies applied.</p> <p><b>Method:</b> Questionnaire</p> <p><b>Conclusion:</b> The study concludes that in spite of an increasing awareness, the gender barrier continues both in the educational and professional sector.</p>
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	High
Relevance for bachelor thesis:	High (rights)

Source No 4	
Reference (APA):	Barsan, E., Memet, F., & Stan, L. (2010). Particularities of the maritime higher education system as part of the maritime transport engineering studies. <i>International Conference on Engineering Education and International Conference on Education and Educational Technologies - Proceedings</i> , 168–175.
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> The main purpose of our paper is to share with the academic community the findings related with the integration of this kind of practical training in the general engineering curricula.</p> <p><b>Method:</b> Qualitative descriptive study</p> <p><b>Conclusion:</b> If the "equality of chances" principle is considered, the increase of theoretical knowledge by acquiring specific practical skills for those students that undergo MARCON, for graduates of female gender an increase of up to 60% in their employment chances is expected as maritime officers on board maritime ships.</p>

Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	Low
Relevance for bachelor thesis:	High (opportunity)

#### Source No 5

Reference (APA):	Belev, B., Mrčelić, G. J., Jurić, Z., & Karin, I. (2020). Analysis of female interest in maritime education at Nikola Vaptsarov Naval Academy Varna and at the Faculty of Maritime Studies, University of Split. <i>Transactions on Maritime Science</i> , 9(2), 342–349. <a href="https://doi.org/10.7225/toms.v09.n02.016">https://doi.org/10.7225/toms.v09.n02.016</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Is to analyze the gradual change of conservative perceptions about the role of women in shipping. <b>Method:</b> Quantitative survey <b>Conclusion:</b> A competitive environment was created on a completely new basis, namely the ability of women to work at an equal footing with men in a purely male-dominated profession.
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	High
Relevance for bachelor thesis:	High (rights)

#### Source No 6

Reference (APA):	Dragomir, C., Baylon, A. M., Azirh, N. T., & Leon, A. (2018). Women Leaders in Shipping as Role Models for Women Seafarers. <i>TRANSSNAV-INTERNATIONAL JOURNAL ON MARINE NAVIGATION AND SAFETY OF SEA TRANSPORTATION</i> , 12(2), 279–284. <a href="https://doi.org/10.12716/1001.12.02.07">https://doi.org/10.12716/1001.12.02.07</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Understanding of human factors considering gender equality and cultural awareness issues met in the shipping industry. <b>Method:</b> 47 qualitative interviews <b>Conclusion:</b> Results of the interviews provide a great source of inspirational
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (status)

Source No 7	
Reference (APA):	DRAGOMIR, C. (2019). Gender in Postmodernism Maritime Transport. <i>Postmodern Openings</i> , 10(1), 182–192. <a href="https://doi.org/10.18662/po/61">https://doi.org/10.18662/po/61</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> The possible relation between postmodernism and maritime gender culture.</p> <p><b>Method:</b> Online questionnaires and e-mail interviews</p> <p><b>Conclusion:</b> This paper is used an innovative approach on the relation between postmodernism challenges and the complexity of the intercultural relations established among individuals (human factors), shipping companies, ship management practices and MET institutions on issues related to gender equality.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (rights)

Source No 8	
Reference (APA):	Fidan, V., GÜNAY, E., Akpınar, G., & Atacan, C. (2020). Gender Discrimination Perception Among Maritime Students In Turkey. <i>Journal of ETA Maritime Science</i> , 8(3), 162–176. <a href="https://doi.org/10.5505/jems.2020.31932">https://doi.org/10.5505/jems.2020.31932</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> To determine the perceptions of associate degree students in maritime programmes about gender discrimination related to maritime profession at public universities across Turkey.</p> <p><b>Method:</b> Questionnaire</p> <p><b>Conclusion:</b> The perception of gender discrimination is higher among female students than male.</p>
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	High
Relevance for bachelor thesis:	High (rights)

Source No 9	
Reference (APA):	Galešić, A.-D., & Coslovich, S. T. (2019). Working with multinational and multicultural crews: A Croatian Seafarers' perspective. <i>Pomorstvo</i> , 33(1), 56–62. <a href="https://doi.org/10.31217/p.33.1.6">https://doi.org/10.31217/p.33.1.6</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> To elicit their views and opinions regarding the work within multinational and multicultural crews on board merchant vessels, the impact such crews have on the operation of the vessel and challenges they may pose.</p> <p><b>Method:</b> Questionnaire</p>

	<b>Conclusion:</b> The questionnaire also elicited Croatian seafarers' views on the importance of cross-cultural training.
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	Medium
Relevance for bachelor thesis:	High (rights)

Source No 10	
Reference (APA):	Guo, J.-L. (2019). Women seafarers in Taiwan: survivors during the evolution of the special shipping relationship between China and Taiwan. <i>Journal of Gender Studies</i> , 28(6), 635–647. <a href="https://doi.org/10.1080/09589236.2018.1502077">https://doi.org/10.1080/09589236.2018.1502077</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> This study attempts to explore the career development of women seafarers in Taiwan. <b>Method:</b> Qualitative interviews <b>Conclusion:</b> When the performance of women seafarers is the same as that of men, and when the seafaring workplace is gradually becoming accustomed to women seafarers through a slow and natural process, the shipping industry will stop treating women seafarers as troublemakers or secondary choices. In this way, true occupational gender equality can be achieved in the seafaring profession.
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (status, rights)

Source No 11	
Reference (APA):	Horck, J. (2010). The gender perspective in maritime education and training. <i>WMU Journal of Maritime Affairs</i> , 9(1), 93–119. <a href="https://doi.org/10.1007/BF03195168">https://doi.org/10.1007/BF03195168</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> The aim of this article is to show if and how European maritime education and training institutions have met the increasing enrolment of women, and how shipping in general has reacted to gender equality. <b>Method:</b> Mixed method (Questioner and interviews) <b>Conclusion:</b> It is recommended that universities seriously pursue this trend. I wish to appeal to educational institutions to publish a university policy on the gender perspective and diversity management in general.
Quality according to JBI critical appraisal checklist for case control	Medium

studies: Used for all quantitative studies:	
Relevance for bachelor thesis:	High

Source No 12	
Reference (APA):	Jensen, H.-J., & Oldenburg, M. (2020). Training seafarers to deal with multicultural crew members and stress on board. <i>International Maritime Health</i> , 71(3), 174–180. <a href="https://doi.org/10.5603/IMH.2020.0031">https://doi.org/10.5603/IMH.2020.0031</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> To describes the intercultural differences in the perception of stress.</p> <p><b>Method:</b> Interviews</p> <p><b>Conclusion:</b> In view of the many psychophysical stressors in daily life on a ship and the lacking respective education, it is recommended to integrate stress management and diversity training in intercultural communication in the higher education.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	Medium (status, rights)

Source No 13	
Reference (APA):	Kim, T.-E., Sharma, A., Gausdal, A. H., & Chae, C.-J. (2019). Impact of automation technology on gender parity in maritime industry. <i>WMU Journal of Maritime Affairs</i> , 18(4), 579–593. <a href="https://doi.org/10.1007/s13437-019-00176-w">https://doi.org/10.1007/s13437-019-00176-w</a>
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> We aim to explore the influence of automation technology implementation on employment opportunities for women seafarers/operators in the merchant shipping industry</p> <p><b>Method:</b> Thematic analysis</p> <p><b>Conclusion:</b> The findings from this study reveal measures to improve gender parity in the maritime industry and help address the strategic directions of the International Maritime Organization (IMO) on women empowerment and the Sustainable Development Goal 5 (SDG 5) of the United Nations.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (Opportunities)

Source No 14	
Reference (APA):	Lokuketagoda, G., Miwa, T., & Ranmuthugala, D. (2016). Containerisation of MET- Moving towards a global



	maritime education system. <i>2016 International Association of Maritime Universities - 17th Annual General Assembly</i> , 26–31.
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> Relevant and efficient, Maritime Education and Training (MET) has to constantly evolve to meet changing industry and social demands</p> <p><b>Method:</b> Unknown method</p> <p><b>Conclusion:</b> Ability to study modules in locations anywhere around the world. complete modules while sailing, without adverse downtime; and appear for assessments anywhere in the world.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	Low, conference paper, requested in full text
Relevance for bachelor thesis:	High (opportunities, status)

#### Source No 15

Reference (APA):	Popescu, C., Varsami, A., & Hanzu-Pazara, R. (2012). The place of women in constanta maritime university. <i>Expanding Frontiers: Challenges and Opportunities in Maritime Education and Training - Proceedings of the 13th Annual General Assembly of the International Association of Maritime Universities, AGA-IAMU 2012</i> , 269–276.
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> Ensure equal profits from the world economy growth for everybody (men and women).</p> <p><b>Method:</b> Unknown method</p> <p><b>Conclusion:</b> There is no intrinsic reason why women should not participate in, and benefit from, employment within the shipping industry. Due to women's acceptance on board merchant vessels, their presence in a maritime university is no longer looked at with scepticism.</p>
Quality according to JBI critical appraisal checklist for qualitative research:	Low, conference paper
Relevance for bachelor thesis:	High (opportunities, status)

#### Source No 16

Reference (APA):	Roos, N. (2019). Female leaders in maritime professions - Finnish educational aspect. In M. S. Svilicic B. Mori Y. (Ed.), <i>20th Commemorative Annual General Assembly, AGA 2019 - Proceedings of the International Association of Maritime Universities Conference, IAMUC 2019</i> (pp. 287–293). International Association of Maritime Universities.
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Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> The purpose of this paper is to examine the current status of women leadership in maritime sector. <b>Method:</b> qualitative interviews <b>Conclusion:</b> The subjects of the interview were connected to the leadership and managerial skills.
Quality according to JBI critical appraisal checklist for qualitative research:	Middle, conference paper.
Relevance for bachelor thesis:	High (status)

Source No 17	
Reference (APA):	Rozanov, V. (2020). Mental health problems and suicide in the younger generation-implications for prevention in the navy and merchant fleet. <i>International Maritime Health</i> , 71(1), 34–41. <a href="https://doi.org/10.5603/IMH.2020.0009">https://doi.org/10.5603/IMH.2020.0009</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Mental health problems and the incidence of suicide in young adults. <b>Method:</b> No method, descriptive <b>Conclusion:</b> We consider that more education and training aimed at mental health problems identification and stress-resilience promotion are needed both for the military and civilian staff on board. Better education of the whole personnel and "healthy ship" approach (better recognition of the crew members' needs, attention to mental health problems, nutrition, physical activity, etc.) may be applied both for the Navy and merchant fleet.
Quality according to JBI critical appraisal checklist for qualitative research:	Low
Relevance for bachelor thesis:	High (rights)

Source No 18	
Reference (APA):	Sampson, H., Turgo, N., Cadge, W., Gilliat-Ray, S., & Smith, G. (2020). Harmony of the Seas?: Work, faith, and religious difference among multinational migrant workers on board cargo ships. <i>ETHNIC AND RACIAL STUDIES</i> , 43(16, SI), 287–305. <a href="https://doi.org/10.1080/01419870.2020.1776362">https://doi.org/10.1080/01419870.2020.1776362</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> This paper advances a long-standing sociological interest in the relationship between religion and work. <b>Method:</b> qualitative, non-participant observation and semi-structured interviews. <b>Conclusion:</b> In multifaith settings workers may prefer to maintain a degree of privacy in relation to their beliefs. Seafarers are strongly incentivised to avoid conflict on board as

	the outcomes of discord can be highly deleterious potentially impacting on both health (physical or mental) and livelihood.
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (rights)

#### Source No 19

Reference (APA):	Shah, B., Andrioti, D., & Jensen, O. C. (2018). Training needs among maritime professionals: A cross sectional study. <i>International Maritime Health</i> , 69(2), 129–136. <a href="https://doi.org/10.5603/IMH.2018.0019">https://doi.org/10.5603/IMH.2018.0019</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> The objective of the study was to identify maritime professionals' perceived training needs <b>Method:</b> Cross sectional study <b>Conclusion:</b> Among the 23 themes, the ranking of perceived training needs was highest for fitness evaluation and examination guidelines and working conditions.
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	High
Relevance for bachelor thesis:	Middle (opportunities)

#### Source No 20

Reference (APA):	Sudarso, Keban, P. E., & Mas'udah, S. (2019). Poverty, lack of awareness of gender education, and patriarchy among Javanese coastal women [Pobreza, falta de conciencia sobre la educación de género y patriarcado entre las mujeres costeras De Java]. <i>Opcion</i> , 35(Special Issue 21), 2899–2921.
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Aims to examine the poverty, awareness of gender education. <b>Method:</b> 70 interviews <b>Conclusion:</b> These women need to be empowered, at least in order to give them enough skills to manage their maritime potential.
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (opportunities)

#### Source No 21

Reference (APA):	Theotokas, I., & Progoulaki, M. (2005). Greek seafarers' attitude on the issue of multicultural working environment. <i>1st International Symposium on Ship Operations, Management and Economics 2005</i> , 310–323.
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Examines the way Greek shipping companies and Greek seafarers perceive culture, and how this affects their approach to crew management and the ships' operation. <b>Method:</b> Questioner <b>Conclusion:</b> Identified with cultural incompatibility, language differences and lack of adequate and appropriate training.
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	High
Relevance for bachelor thesis:	High (rights)

#### Source No 22

Reference (APA):	Ungureanu, C. C. (2014). Intercultural education, a response to contemporary multilingual societies and a new challenge for Maritime Education and Training (MET) Institutions. In Laborda, JC and Ozdamli, F and Maasoglu, Y (Ed.), <i>5TH WORLD CONFERENCE ON EDUCATIONAL SCIENCES</i> (Vol. 116, pp. 4260–4263). <a href="https://doi.org/10.1016/j.sbspro.2014.01.928">https://doi.org/10.1016/j.sbspro.2014.01.928</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> The aim is to describe intercultural education multilingual societies and a new challenge for Maritime Education. <b>Method:</b> no method <b>Conclusion:</b> thrust into communicating across cultures practice patience, understanding of the different culture, reactions are often culturally driven.
Quality according to JBI critical appraisal checklist for qualitative research:	Middle
Relevance for bachelor thesis:	Middle (rights)

#### Source No 23

Reference (APA):	Zhao, M., Zhao, L., Zhang, P., Wu, J., Pike, K., & Broadhurst, E. (2017). Chinese women seafarers: A case study of the women cadets in Shanghai. <i>Marine Policy</i> , 83(February), 40–47. <a href="https://doi.org/10.1016/j.marpol.2017.05.027">https://doi.org/10.1016/j.marpol.2017.05.027</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Aiming to examine seafarers' welfare, focusing on gender issues arising from a multi-cultural crew environment in three countries. <b>Method:</b> Mixed method, 26 interview and questioner.

	<b>Conclusion:</b> The paper concludes with a discussion on an important new state policy concerning gender equality in university recruitment and with recommendations to move things forward.
Quality according to JBI critical appraisal checklist for qualitative research:	High
Relevance for bachelor thesis:	High (opportunities)

## APPENDIX IV

Excluded, not relevant to the aim

Source	
Reference (APA):	James, A. J., Schriever, U. G., Jahangiri, S., & Girgin, S. C. (2018). Improving maritime English competence as the cornerstone of safety at sea: a focus on teaching practices to improve maritime communication. <i>WMU Journal of Maritime Affairs</i> , 17(2), 293–310. <a href="https://doi.org/10.1007/s13437-018-0145-4">https://doi.org/10.1007/s13437-018-0145-4</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> This paper identifies the growth of English as the lingua franca of the sea, as a framework for the later discussion on current teaching practices. <b>Method:</b> Literature review <b>Conclusion:</b> This paper identifies a barrier in maritime teaching practices.
Quality according to JBI critical appraisal checklist for qualitative research:	Medium Excluded because of Literature review
Relevance for bachelor thesis:	Low (opportunities)

Source	
Reference (APA):	Kormych, L. (2020). The gender equality in maritime industries: Transnational law perspectives. <i>Lex Portus</i> , 3(23), 24–43. <a href="https://doi.org/10.26886/2524-101X.3.2020.2">https://doi.org/10.26886/2524-101X.3.2020.2</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Examines the international legal frameworks for ensuring the gender equality in maritime industries. <b>Method:</b> Unknown method <b>Conclusion:</b> The issue can be effectively solving through sharing policies and practices that are based on affirmative actions and are aimed on granting access to maritime training, recognizing needs of women working in maritime and protecting their rights. Acknowledging the peculiarities of legal regulation, the system of rule-making subjects and the focus on empowering women within the policies of such subjects. Equality training is suggested.
Quality according to JBI critical appraisal checklist for qualitative research:	Low Only abstract in English, full article only available in Russian language.
Relevance for bachelor thesis:	Unknown (rights)

Excluded, after quality reviewed

Source	
Reference (APA):	Alfultis, M. A. (2018). Educating the future maritime workforce in a sea of constant disrupters and change. In M. de O. F. X. C. M. Martin A. Grifoll M. (Ed.), <i>AGA 2018 - 19th Annual General Assembly (AGA) of the International Association of Maritime Universities (IAMU)</i> (pp. 87–93). International Center for Numerical Methods in Engineering.
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> This paper considers how technological change, and the rate of that change, will impact maritime education and training and our graduates.</p> <p><b>Method:</b> No method.</p> <p><b>Conclusion:</b> Technological change will require maritime universities to conduct an "environmental scan" of the world and environments in which they operate, and interpret relevant external factors and trends. As an example, the author provides a scan of the maritime industry, its impact on maritime education and training programs, and recommendations on how maritime universities can adapt in an age of "accelerated change."</p>
Quality according to JBI critical appraisal checklist for case control studies: Used for all quantitative studies:	Low Conference paper not available
Relevance for bachelor thesis:	Medium (status)

Source	
Reference (APA):	Elsaeed, L., & Abdelgalil, E. (2008). Women maritime education and training: An Egyptian perspective. <i>9th Annual General Assembly 2008 - International Association of Maritime Universities (IAMU)</i> , 70–85.
Summary of reference (purpose, method, conclusions):	<p><b>Purpose:</b> Empowering women to take full advantage of the positive aspects of globalization</p> <p><b>Method:</b> No method</p> <p><b>Conclusion:</b> The Forum means to promote more female inductions into the maritime industry</p>
Quality according to JBI critical appraisal checklist for qualitative research:	Low Conference paper not available
Relevance for bachelor thesis:	High (status)

Source	
Reference (APA):	Kanev, D., Toncheva, S., Terziev, V., & Narleva, K. (2017). Specific aspects of motivation of seafarers. <i>18th Annual</i>

	<i>General Assembly of the International Association of Maritime Universities - Global Perspectives in MET: Towards Sustainable, Green and Integrated Maritime Transport, IAMU 2017, 1, 392–400.</i> <a href="https://doi.org/10.2139/ssrn.3144743">https://doi.org/10.2139/ssrn.3144743</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Investigating factors that motivate the attraction and retention in the maritime profession. <b>Method:</b> Literature review <b>Conclusion:</b> The paper summarizes the results of the research and makes recommendations how to improve motivation in the maritime industry.
Quality according to JBI critical appraisal checklist for qualitative research:	Medium Excluded because of Literature review
Relevance for bachelor thesis:	Medium (status)

Source	
Reference (APA):	Kitada, M., & Harada, J. (2019). Progress or regress on gender equality: The case study of selected transport STEM careers and their vocational education and training in Japan. <i>Transportation Research Interdisciplinary Perspectives, 1</i> . <a href="https://doi.org/10.1016/j.trip.2019.100009">https://doi.org/10.1016/j.trip.2019.100009</a>
Summary of reference (purpose, method, conclusions):	<b>Purpose:</b> Examines the role of vocational education and training (VET) in the STEM workforce to advance women's integration into traditionally male-dominated workplaces <b>Method:</b> Literature review <b>Conclusion:</b> In order to remove barriers to including women in STEM careers, institutional arrangement of vocational educational training VET should be reviewed through gender-mainstreaming and life-long VET would help to stop the leaky pipe line of STEM women in Japan.
Quality according to JBI critical appraisal checklist for qualitative research:	High Excluded because of Literature review
Relevance for bachelor thesis:	High (opportunities)



## APPENDIX V

### Literature search

Search 1												
Databas	Search words	Filter serch	Number of hits	Dublicates	Abstracts read	Included	Excluded	Reason for exlusion	Full text read	Exluded	Reason for exlusion	Included articles
Scopus	"maritime" AND "equality" AND "training"	Article title, Abstract, Keywords	13	0	13	7	6	Not Eduication	7	0		7
Scopus	"maritime" AND "equality" AND "education"	Article title, Abstract, Keywords	11	9	2	1 (6 earlier included)	1 (3 earlier excluded)	Book Review	1	0		1
Scopus	"seafarer" AND "equality" AND "training"	Article title, Abstract, Keywords	5	4	1	1 (2 earlier included)	(2 earlier excluded)		1	0		1
Scopus	"seafarer" AND "equality" AND "education"	Article title, Abstract, Keywords	3	3		(1 earlier included)	(2 earlier excluded)					
Web of science	maritime" AND "equality" AND "training"	Topic, English, Article	6	5	1	1 (3 earlier included)	(2 earlier excluded)		1	1	Not relevant to the aim	0
Web of science	"maritime" AND "equality" AND "education"	Topic, English, Article	7	5	2	1 (3 earlier included)	1 (2 earlier excluded)	Not relevant to the aim	1	1	Not relevant to the aim	0
Web of science	"seafarer" AND "equality" AND "training"	Topic, English, Article	5	5		(3 earlier included)	(2 earlier excluded)					
Web of science	"seafarer" AND "equality" AND "education"	Topic, English, Article	3	3		(1 earlier included)	(2 earlier excluded)					
<b>Summary Search 1</b>			<b>53</b>	<b>34</b>	<b>19</b>	<b>11</b>	<b>8</b>		<b>11</b>	<b>2</b>		<b>9</b>

Search 2												
Databas	Search words	Filter serch	Number of hits	Dublicates	Abstracts read	Included	Excluded	Reason for exlusion	Full text read	Exluded	Reason for exlusion	Included articles
Scopus	"maritime" AND "inequality" AND "training"	Article title, Abstract, Keywords	6	2	4	4 (1 earlier included)	(1 earlier excluded)		4	0		4
Scopus	"maritime" AND "inequality" AND "education"	Article title, Abstract, Keywords	8	5	3	(4 earlier included)	3 (1 earlier excluded)	Not relevant to the aim				
Scopus	"seafarer" AND "inequality" AND "training"	Article title, Abstract, Keywords	3	3	0	(3 earlier included)	0					
Scopus	"seafarer" AND "inequality" AND "education"	Article title, Abstract, Keywords	3	3	0	(2 earlier included)	(1 earlier excluded)					
Web of science	maritime" AND "inequality" AND "training"	Topic, English, Article	0	0	0	0	0					
Web of science	"maritime" AND "inequality" AND "education"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "inequality" AND "training"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "inequality" AND "education"	Topic, English, Article	0	0	0	0	0					
<b>Summary Search 2</b>			<b>20</b>	<b>13</b>	<b>7</b>	<b>4</b>	<b>3</b>		<b>4</b>	<b>0</b>		<b>4</b>

Search 3												
Databas	Search words	Filter serch	Number of hits	Duplicates	Abstracts read	Included	Excluded	Reason for exlusion	Full text read	Exluded	Reason for exlusion	Included articles
Scopus	"seafarer" AND "gender" AND "training"	Article title, Abstract, Keywords	9	6	3	1 (5 earlier included)	2 (1 earlier excluded)	Not relevant to the aim	1	0		1
Scopus	"seafarer" AND "religious" AND "training"	Article title, Abstract, Keywords	2	0	2	1	1	Not relevant to the aim	1	0		1
Scopus	"seafarer" AND "ethnic" AND "training"	Article title, Abstract, Keywords	1	0	1	1	0	Not relevant to the aim	1	0		1
Scopus	"seafarer" AND "age" AND "training"	Article title, Abstract, Keywords	16	0	16	0	16	Not relevant to the aim				
Scopus	"seafarer" AND "multicultural" AND "training"	Article title, Abstract, Keywords	7	0	7	2	5	Not about edducation or equality in education	2	0		2
Scopus	"maritime" AND "gender" AND "training"	Article title, Abstract, Keywords	25	17	8	1 (13 earlier included)	7 (4 earlier excluded)	Not about education or equality in education	1	0		1
Scopus	"maritime" AND "religious" AND "training"	Article title, Abstract, Keywords	6	2	4	1 (1 earlier included)	3 (1 earlier excluded)	Historical reserch, not relevant to the aim	1	1		0
Scopus	"maritime" AND "ethnic" AND "training"	Article title, Abstract, Keywords	7	2	5	1 (1 earlier included)	4 (1 earlier excluded)	Political, not relevant to the aim	1	0		1
Scopus	"maritime" AND "age" AND "training"	Article title, Abstract, Keywords	47	15	32	1 (2 earlier included)	31 (13 earlier excluded)	Not relevant to the aim	1	1	Excluded, after quality reviewed	0
Scopus	"maritime" AND "multicultural" AND "training"	Article title, Abstract, Keywords	17	9	8	1 (3 earlier included )	7 (6 earlier excluded)	Historical and politics, not relevant to the aim	1	1	Not relevant to the aim	0

Databases	Search words	Filter search	Number of hits	Duplicates	Abstracts read	Included	Excluded	Reason for exclusion	Full text read	Excluded	Reason for exclusion	Included articles
Scopus	"seafarer" AND "gender" AND "education"	Article title, Abstract, Keywords	8	5	3	(3 earlier included)	3 (2 earlier excluded)	Not relevant to the aim				
Scopus	"seafarer" AND "religious" AND "education"	Article title, Abstract, Keywords	3	3	0	0	(2 earlier excluded)	Not relevant to the aim				
Scopus	"seafarer" AND "ethnic" AND "education"	Article title, Abstract, Keywords	3	1	2	0	2 (1 earlier excluded)	Not relevant to the aim				
Scopus	"seafarer" AND "age" AND "education"	Article title, Abstract, Keywords	17	9	8	0	8 (9 earlier excluded)	Not relevant to the aim				
Scopus	"seafarer" AND "multicultural" AND "education"	Article title, Abstract, Keywords	5	3	2	0	2 (3 earlier excluded)	Technical, not relevant to the aim				
Scopus	"maritime" AND "gender" AND "education"	Article title, Abstract, Keywords	33	19	14	(9 earlier included)	14 (10 earlier excluded)	Not relevant to the aim				
Scopus	"maritime" AND "religious" AND "education"	Article title, Abstract, Keywords	15	5	10	(1 earlier included)	10 (4 earlier included)	Historical and politics, not relevant to the aim				
Scopus	"maritime" AND "ethnic" AND "education"	Article title, Abstract, Keywords	11	8	3	(2 earlier included)	3 (6 earlier excluded)	Not relevant to the aim				
Scopus	"maritime" AND "age" AND "education"	Article title, Abstract, Keywords	55	27	28	(1 earlier included)	28 (26 earlier excluded)	Book review, conferences, smoking, food consumption, not relevant to the aim				
Scopus	"maritime" AND "multicultural" AND "education"	Article title, Abstract, Keywords	15	12	3	(1 earlier included)	3 (11 earlier excluded)	Not relevant to the aim				
Web of science	"seafarer" AND "gender" AND "training"	Topic, English, Article	3	2	1	(2 earlier included)	1	Not relevant to the aim				
Web of science	"seafarer" AND "religious" AND "training"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "ethnic" AND "training"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "age" AND "training"	Topic, English, Article	4	1	3	0	3 (1 earlier excluded)	Management, not relevant to the aim				
Web of science	"seafarer" AND "multicultural" AND "training"	Topic, English, Article	3	2	1	(1 earlier included)	1 (1 earlier excluded)	Not relevant to the aim				

Databases	Search words	Filter search	Number of hits	Duplicates	Abstracts read	Included	Excluded	Reason for exclusion	Full text read	Excluded	Reason for	Included articles
Web of science	"maritime" AND "gender" AND "training"	Topic, English, Article	14	11	3	1 (7 earlier included)	2 (4 earlier excluded)	Not relevant to the aim	1	0		1
Web of science	"maritime" AND "religious" AND "training"	Topic, English, Article	3	0	3	0	3	Not relevant to the aim				
Web of science	"maritime" AND "ethnic" AND "training"	Topic, English, Article	3	2	1	1 (1 earlier included)	(1 earlier excluded)	Not relevant to the aim	1	0		1
Web of science	"maritime" AND "age" AND "training"	Topic, English, Article	23	15	8	(1 earlier included)	8 (14 earlier excluded)	Not relevant to the aim				
Web of science	"maritime" AND "multicultural" AND "training"	Topic, English, Article	11	7	4	(2 earlier included)	4 (5 earlier excluded)	Management, not relevant to the aim				
Web of science	"seafarer" AND "gender" AND "education"	Topic, English, Article	2	2	0	(2 earlier included)	0					
Web of science	"seafarer" AND "religious" AND "education"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "ethnic" AND "education"	Topic, English, Article	0	0	0	0	0					
Web of science	"seafarer" AND "age" AND "education"	Topic, English, Article	5	4	1	0	1 (4 earlier excluded)	Not relevant to the aim				
Web of science	"seafarer" AND "multicultural" AND "education"	Topic, English, Article	3	3	0	(1 earlier included)	(2 earlier excluded)					
Web of science	"maritime" AND "gender" AND "education"	Topic, English, Article	22	17	5	2 (5 earlier included)	3 (12 earlier excluded)	Not relevant to the aim	2	1	Excluded, after quality reviewed	1
Web of science	"maritime" AND "religious" AND "education"	Topic, English, Article	4	3	1	0	1 (3 earlier excluded)	Immigration, not relevant to the aim				
Web of science	"maritime" AND "ethnic" AND "education"	Topic, English, Article	4	3	1	(2 earlier included)	1 (1 earlier excluded)	Not relevant to the aim				
Web of science	"maritime" AND "age" AND "education"	Topic, English, Article	29	23	6	(2 earlier included)	6 (21 earlier excluded)	Fish, food, fisher-men, technology, not relevant to the aim				
Web of science	"maritime" AND "multicultural" AND "education"	Topic, English, Article	9	9	0	(2 earlier included)	(7 earlier excluded)					
<b>Summary Search 3</b>			<b>444</b>	<b>247</b>	<b>197</b>	<b>14</b>	<b>183</b>		<b>14</b>	<b>4</b>		<b>10</b>
<b>Summary Search 1-3</b>			<b>517</b>	<b>294</b>	<b>223</b>	<b>29</b>	<b>194</b>		<b>29</b>			<b>23</b>



**CHALMERS**