

# **How to increase the number of female applicants to maritime studies**

**Candidate name:** Miriam Røed-Vikøren

**University of South-Eastern Norway**

Faculty of Technology, Natural Sciences and Maritime Sciences

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## **Abstract**

The maritime industry and maritime studies are characterized by a generational bias based on stereotypes imprinted in the narratives of the organizations. Although the focus of the media and studies is to get more women into the industry, the maritime industry is lagging behind. This master's thesis focuses on how to increase the number of female applicants for maritime education. The assignment emphasizes the importance of informing early enough, this due to a flawed or generational narrative that is not in line with today's world view. Through interviews with secondary school counselors in Vestfold and Telemark, one has gained an insight into how the schools facilitate the educational choices of the 10th grade pupils. Statistics from Norway shows a growth over the last years with the new focus on getting more women in these male dominant industries.

*Keywords:*

*Maritime; Women; Marketing; Education; History; Recruitment; Culture; Studies; Visibility; Information*

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*Miriam Rød-Vikøren*

*Færder, 2023*

# Table of Contents

Abstract .....	I
Acknowledgments .....	II
Introduction .....	1
The challenge and goal of the thesis .....	1
Theoretical perspectives .....	3
Women at sea - A story telling in Norwegian history .....	4
Equality .....	5
Career guidance .....	7
Education choice .....	8
Literature review .....	10
Method for finding and selecting literature.....	10
Reviewed literature.....	10
Research Method .....	11
Refined research question .....	11
Population and sample .....	12
Data collection method .....	12
Interview .....	12
Data analysis method .....	13
Ethical considerations .....	13
Findings .....	14
Statistic data .....	16
Applicants .....	16
Analyzes.....	19
Discussion .....	21
Culturally .....	21
Relationally .....	22
Structurally.....	22
Conclusion .....	24
Limitations .....	24
Future research .....	24
Reference .....	25
Appendix.....	i
Appendix 1; Reading list .....	i
Appendix 2; Interview guide:.....	iv

Appendix 3; NSD assessment .....v  
Appendix 4; Female applicants to collages..... vii  
Appendix 5; Male applicants to collages ..... xiii

# Introduction

## The challenge and goal of the thesis

There is a lot of information that is not given when young people choose a field of work. The differences between how the information is presented play a major role in relation to the genders. Many follow their parents' footsteps in choosing education, this may be due to little information or a lack of interest. That is why it is important to inform earlier and provide a more exciting approach to the studies that are available.

Personally, I have gained an insight into how the information does not reach those who might need it. When I finished my bachelor degree in economics and management, the taste for knowledge was still present and the idea of a master's degree increased. In the meeting with the student supervisor, I was greeted with minimal information and was told to look at the website of USN for more information. As the application deadline approached, I looked through a text box on studentweb (*Studentweb*, 2018) and came across more possibilities than I had thought I could choose from the information I was presented with.

How can vocational schools, upper secondary schools and universities provide information that will meet pupils and students, and how can the understanding of the culture in the maritime industry change. Is it only by giving the information in the form of brochures or is there a double aspect where the information is to be given by holding information meetings at the schools and giving the young student a meeting with people and students who actually work in the industry?

In 2020, the shipping association's business cycle survey presented figures that gave an overview that there are 35% women in the maritime industry on land, 16% of women in the Norwegian shipping companies, 7% are at sea and 3% are in the deep sea (Norges Rederiforbund, 2020). This percentage distribution also turns out to be a trend within the number of applicants for the various maritime studies. Presented in a report from the Directorate for Higher Education and Skills published from April 2022, it shows that there are a total of 683 first-choice applicants for maritime studies, of which only 46 are women. (Diku, 2022).

Based on the figures and the lack of information flow around maritime studies, it will be very interesting to find out the reason why more women do not choose this study. This can be done

by taking a deep dive into the history of the maritime sector. But also look at how the information is distributed in the various stages of the education by conducting interviews of key personnel, as well as looking at the marketing techniques that have been presented in recent years. Therefore, the research question for this master's thesis are

*How can the number of female applicants to maritime studies be increased?*



## Theoretical perspectives

Theoretical perspectives have a more fluid form than the concept of theory, that is, theoretical perspectives are more of a point of view or consideration that the author has directed towards a particular theme. (Johannessen, et.al, 2019, p. 428). This master's thesis is based on the issue of getting more women into maritime studies. Therefore, it is important to understand the history behind it, which can be highlighting the obstacle, but also can perhaps shed light on new angles that society must take in order for the trend to change.

There is a common desire in Norway to equalize the gender balance across industry and sectors. This means that it is both desirable to recruit more men in the female-dominated industries such as the health sector and to recruit more women into the male-dominated industries (Departments, 2021). The main purpose of the government is to equalize society so that everyone can have equal opportunities and the freedom to make their own choices, regardless of their gender, ethnicity, religion, functional ability, sexual orientation, gender identity and age. Traditionally, the maritime industry is male-dominated. This is reflected in the female employees who were at sea in the period 2016 to 2020, which was only 12%. Of these, the majority were employed in catering (Nærings- og fiskeridepartementet, 2020). Presented in the parliamentary message "*Greener and smarter - tomorrow's maritime industry*" published on 4 December 2020, there is a need for diversity and equality in the maritime industry in order to achieve a sustainable future. This means that with diversity within management groups and teams, value creation and innovation can be increased. This is because with diversity, competence will be increased as individuals gain a more comprehensive understanding of various problems. This would not have been available in locked groups with the same understanding backgrounds. The value competence that a diverse team will bring into problem solving therefore increases work competence and gives a competitive advantage. The industry committee therefore wants the government to prepare a strategy to increase the recruitment of women, as well as increased diversity in the maritime industry.

## **Women at sea - A story telling in Norwegian history**

Norway has an extensive coastline that has employed many people, fishing is one of the resources that are most common. It is estimated that around 18% of the male population at the end of the 1860s was employed by fishing (Hallenstvedt & Dørum, 2021). The gender role pattern in the 19th century corresponded that the woman's place was to provide for the household and the children, thus there was more room for the men to benefit by going fishing (Lønnå, 2010, p. 17). Superstition was a way of explaining the unknown and was an everyday practice. One of these superstitions was that women on board the boat would bring "misery, turmoil and storms" and were directly linked to accidents and shipwrecks (Hodne, referred to in Lønnå, 2010, p.17). Even so, female fishermen fished for their own use and used the boat as a means of transportation (Lønnå, 2010, pp. 17-18). There were also several women who were allowed to join onboard the ship as wives or daughters of the ship's officers (Lønnå, 2010, p. 23).

It was first in the era of the steamboat in 1827 that women was allowed to earn money on the sea. Now the need was for someone to do the cleaning, cooking, serving and preparing the common areas as well as the cabins. This type of work was not of interest to the male part and thus it created jobs for the women (Lønnå, 2010, p. 21-22). Although the women on board performed work, they were not listed as part of the crew according to the ship's lists in the 20th century, the women were referred to as "others" together with passengers, postal officers and lodes-man (Lønnå, 2010, p. 24). In the Seamen's Act introduced in 1953, it described that women had to be 20 years old to work on board, while this was not the case for boys who could take up certain positions already at the age of 15 (Lønnå, 2010, p. 218).

Today's women are not hindered by the minimum age of 20 to work on board ships, as this has been removed from the legislation. Women can also take a maritime education in the same way as men. As part of increasing the proportion of female applicants, two gender points have been given to female applicants for a bachelor's degree in nautical studies in Norway (Samordna opptak, 2013). But even so, the vast majority of positions are still occupied by men. In 2010, Herodd Widding, the crew chief for Hurtigruten ASA, stated that they would like more female applicants. But he assumed that family life played a greater role for women versus men. (Lønnå, 2010, p. 320). The International Maritime Organization (IMO) presents that there are approximately 1.2 million seafarers, only 2% are female seafarers, and 94% work in the cruise industry. (International Maritime Organization, 2021).

There are overall approximately 7% female seafarers in the Norwegian industry (Norges rederiforbund, 2020). In order to be able to increase the proportion of women within the maritime industry, the IMO helps to support and make women more visible. It is a general thought that by making women more visible, they will be more accepted. One of the organizations that are working for betterment of work equality are Women's International Shipping & Trading Association (WISTA), an network organization whose main task is to highlight and support women in leadership positions within maritime, logistics and trade (IMO, 2019).

There is a common understanding of what life are within maritime industry, this understanding is mostly based on attitudes and culture. If one follows Edgar Schein's definition of what an organizational culture is, it is described as a pattern of basic assumptions developed by a particular group that learns to master its problems with internal integration and external adaptation (Jacobsen & Thorsvik, 2013, p. 130). There is a wide understanding that life in the maritime industry is not for everyone. In the report on “gender equality in the fisheries” presents an overall opinion that it is often a "boys club atmosphere" and women are expected to tolerate this (Henriksen & Nyrud, 2021).

As a society, we are facing a generational shift. Through this shift, new employees will also enter established organizations. Along with increased knowledge, the perception of the world will also change. This will affect the dynamics within the organizations and the established norms and values will therefore change in accordance with developments to promote a better pattern of action in relation to competitive advantage and the survival of the organization.

## **Equality**

The investigation "Girls' rooms, boys' rooms and opportunity rooms" published in November of 2019, shows that equality challenges among children and young people have limitations in direct correlation between gender stereotypes on a structural level. The survey shows that there is still a small proportion of girls in the traditional education programs dominated by boys. It will therefore be difficult to claim with clarity that the trend is heading towards a balanced gender distribution. (NOU 2019: 19).

Unfortunately, there is a common thread between the lack of knowledge about the maritime industry and the different career paths from the counselors at the secondary schools and the number of applicants. The lack of understanding helps to contribute to the fact that more

young people do not choose a maritime career path. One of the informants stated that it is always easier to present professions that you are familiar with.

In 2015, Cars and Österman presented the idea that you cannot minimize the gender gap by focusing on increasing female students alone. The issues surrounding gender must be operationalized, refined and can be included in an education policy and in curriculum planning. Mainly, these questions should be able to answer the gender issues that arise on an individual and structural level, but also on a more symbolic level (Cars & Österman, 2015, p. 145-153).

Norway is a country with great opportunities and, in relation to today's society, is based on being equal, by this it is meant that everyone should have an equal basis to achieve equal success. With a wide range of professions and needs, the labor market is divided into many trades, industries and sectors, often these are dominated by one gender. This means that within the health sector there are often women in abundance, while within construction it is dominated by men (Reisel & Teigen, 2014, p. 11). This type of distribution is often called a gender-divided labor market. This gender segregation is divided into horizontal and vertical segregation. A horizontal segregation deals with how the genders are distributed in different occupations, industries and sectors, and the vertical segregation deals with how the genders fill the positions within the organizational hierarchy (NOU, 2012: 15, p. 31).

## Career guidance

Career guidance is an English word that is characterized by international meanings, and has been developing over several decades. The term itself is relatively new in Norway and the definition can vary depending on which context is used (NOU, 2016:7, p. 17). The Organization for Economic Cooperation and Development (OECD) has a definition from 2004 which is often used, but which has been further developed by the European lifelong guidance policy network. This description has been translated by the committee "*Norway in transition - career guidance for individuals and society*".

*"Lifelong career guidance encompasses a range of activities that engage people in all of their ages and stages in life able to get to know their strengths, competencies and interests, make meaningful choices related to education, training and work, and throughout the life course handle learning, work and other situations where strengths and competences are developed and used"*

(NOU, 2016:7, 2019, p. 17).

Frank Parson had his breakthrough in the 20th century with the modern career guide. He believed that society's development depended on individual career guidance (NOU, 2016:7, p. 21). By this he meant the benefit of placing the right people in the right work, that is to say that the career guidance should find individuals who would be able to give decisive and positive results to the development of society.

Throughout the next 100 years, the career guidance was through changes in relation to societal developments in education and work. Career guidance was first introduced and used in the education system in Norway after the Second World War in connection with welfare development. Primary schools were the first to be introduced to career guidance, but this was managed by the employment offices and not the school system. In line with the development of new curricula, career guidance has also changed (Birkemo, 1997). The knowledge lift in 2006 has seen major changes in career guidance. That is to say, it underwent a greater organization of counseling and more resources became available. The authorities organized the creation of the subject Education Choice as a form of organizing career guidance in primary school (Utdanningsdirektoratet, 2015).

In 2008, the EU decided to improve career guidance and in 2016 the Norwegian government presented the report "*Norway in transition - career guidance for individuals and society*". With this, career guidance should develop career competence in students so that they can make a career choice. This means that students must be able to handle obstacles and challenges in the choices they make, and thus become experts in making self-determined decisions (NOU 2016:7, p. 139).

In the 2016 report *Norway in transition – career guidance for individuals and society*, it is recommended to develop a framework for career guidance (Kompetanse Norge, 2019). This framework was developed by Kompetanse Norge on behalf of the Ministry of Education. The report from Kompetanse Norge presented in 2019 is based on the fact that career guidance is about helping individuals to make education, training and work choices that lead to the individual being able to manage their own career.

## **Education choice**

Education choice is a subject that you are introduced in 2008 to the secondary school between grades 8 and 10, the main task of this subject is to make it easier to make good choices in relation to further education (Sandvik, 2016). Competence Norway (2019) points out that the teacher in the subject is very important in relation to how the student learns and acts in relation to the knowledge of career competence. With career competence, the focus is on own competence through development, self-management and planning of one's career (Kompetanse Norge, 2019). Mainly, individuals will have to analyze, gather and apply competence to make a career choice (Pedersen, 2016).

The adviser does not stand alone but must have help from subject teachers to achieve a broader level of knowledge within the subject Education Choice. In this master's thesis, several advisers at junior high schools in Telemark and Vestfold have expressed their views in interviews regarding their school and how the information about further education choices is carried out.

The key person in the career guidance is the adviser, this because the person is competent in the field. The adviser's tasks are to organize, plan and carry out the teaching of the Education Choice subject. Here it is very important for the school and the pupils that the adviser has close cooperation. It is the teachers who are responsible for the actual teaching and training within the subject. It will be up to this subject teacher to collaborate with the same actors both

inside and outside the school. This is strongly encouraged by the Directorate of Education (2015). It will therefore be important that the subject teacher has the opportunity to familiarize himself with what the career guidance is about.

Pupils are still children, so it will be very important to have good cooperation with parents and guardians. Drugli and Nordahl (2016) are some of those who believe that parents who have a positive collaborative relationship with the school, also have great importance for their learning and development. For some parents, it can be frightening and challenging to have an active relationship with the school as their competence is not sufficient (Haugsbakken & Bruland, 2009). Guardians and parents are the closest promoters of motivation and encouragement the student has. It will therefore be important to make arrangements so that parents can also take part in Education Choice, with this they get a clear understanding of the learning process. This is often carried out through parent meetings that inform about educational tools and options.

## **Literature review**

In this literature review chapter, the goal are to explore and investigate the issues that are perceived in regards to the information that are given. Are they up to code or are the information derivative and based on assumptions about an occupational group.

The thesis literature review is based on three steps. Step one identify relevant literature, step two evaluation on the sources, and step three a literature review.

### **Method for finding and selecting literature**

In order to find and select literature that are relevant to the study the researcher must use some key words. A keyword is words used in a search of relevant subject matter, it is used in academic papers and are in direct linked to the research questions in the thesis. (Merriam-Webster, n.d.).

The main search word in this master thesis are;

*Maritime; Women; Marketing; Education; History; Recruitment; Culture; Studies; Visibility; Information*

### **Reviewed literature**

In order to achieve a desired goal, several sub-goals must be met. It is therefore important to obtain a lot of information about the subject being presented. With this, you will be able to gain deeper knowledge and at the same time be able to convey a more correct understanding. When you collect literature data, you will also be able to find gaps in knowledge, these are important to be able to close for a comprehensive picture. In the appendix a comprehensive literature and statistics lists are presented. These are important in relation to the study and have been given a 1 to 10 scale in relevance, 1 is low and 10 is high.

The literature in the reading list are divided in to three sections. Firstly published books, second research papers, and thirdly rapports and statistics. The mindset of choosing a diverse specter of literature is to get a greater understanding of the topic of this paper. Therefore the validation of this paper is higher due to the broader research.



## **Research Method**

In this master's thesis, a qualitative method is used by a literature study and qualitative interviews as a research design. A literature study is a systematic review of existing research and empirical evidence for the topic one wishes to study (Johannessen, et.al, 2019, p.103). Through recorded empirical observations, theories are designed (Johannessen, et.al, 2019, p. 414). The data is obtained from existing articles, books and other sources of information for use in a literature study. This method will initially be able to provide a theoretical angle and understanding of the problem that has been presented.

With the research question in mind, a dialogue with key personnel is needed to get a better understanding of how the information are delivered. Therefore an interview is used and an interview guide is made to get a better structure on the information collected. Qualitative interview can best be described as a conversation between the researcher and a respondent, where the pace of the conversation is controlled by the researcher. In advance, the researcher has created an interview guide, a plan for which topics she wants to talk about. The interview guide is created based on the problem. (Johannessen, et.al, 2019, p. 143-157).

### **Refined research question**

It is necessary for a master thesis to not only focus on a theme but also a research question. This is a question on the theme that will center the research and guide the reader through the thesis.

The question for the thesis are;

*How to increase the number of female applicants to maritime studies?*

Before one get the opportunity to tackle the research question, one have to start with the background. It will therefore be important to obtain information about the maritime history surrounding women, the preconceived notions about women at sea as well as what information we give pupils and students in the study selection process. Do the students base their choices on a preconceived assumption about what the maritime sector offers or are there other factors at play.

*What is provided to the pupils and students in regards to maritime studies.*

## **Population and sample**

In this study the focus are on high schools in the region. This means that all high schools in Vestfold and Telemark are looked inn to. Because of the large amount of schools in Norway, and the short timeline of the master thesis this narrowing of the scope has been chosen.

Although the interviews themselves are focused in a controlled environment, the statistics are based on maritime studies throughout Norway. This is because pupils at secondary schools are free to choose the school they want regardless of where they currently reside. But also because the information obtained from the advisers has been prepared by the Directorate of Education and is a common provision for all. This is part of the educational choice subject presented in the previous chapter.

## **Data collection method**

The data obtained in this study is mainly obtained through the sharing of the information the schools offer their students. This data is divided into codes. The codes are given information characteristics which from there provide an understandable mapping of what is offered by information. Thus it will be easier to understand what is missing and whether the information is up to date. (Johannessen et al., 2019)

To give the data a relevant weight, the thesis is also based on final statistics presented for a period of 10 years collected form Statistics Norway (Statistisk sentralbyrået, n.d).

## **Interview**

The purpose of an interview is to gain an insight and knowledge about the course of events, opinions, arguments, decisions and assessments that can define the meaning.

There is a distinction between structured and unstructured interviews. But there is also a hybrid form that is based on both of them, this is also called a semi-structured interview. In a structured interview, the questions themselves are set and presented in an interview guide, there are therefore no follow-up questions outside of this guide (Bryman, 2016). Through an unstructured interview, the topic itself is presented via a fixed question and continues on the topic. In this master's thesis, it has been chosen to use a semi-structured interview, where an interview guide has been created but there are opportunities for follow-up questions along the

way, this is often referred to as a qualitative interview and all the questions are categorized in the same way for all the listed the informants (Kleven & Hjordemaal, 2011). About 5 follow-up questions have been asked that are not in the original interview guide. This means that all the interviews are very different, even though many of the original questions have the same starting point.

## **Data analysis method**

In this thesis a coding of data is used. It references to a process that transforms information to a set of understandable categories. This coding process gives a systematic account of a recorded phenomenon. (Johannessen et al., 2016).

The interviews that have been carried out are by advisers from various secondary schools in Vestfold and Telemark. The advisers are assigned different data codes, these codes are represented in by “representative 1-2-3” and so on.

## **Ethical considerations**

In all studies, it is important to take precautions in relation to the ethical values. Ethical values are based on two principles "do no harm" and "do good". This means that the information that is obtained is released voluntarily and correctly with the approval of the participants.

Participants must have the opportunity to withdraw and maintain their anonymity. In cases where anonymity is not possible, one must proceed with vigilance and seek whether this is right to continue. (Johannessen et al., 2019).

In this thesis, the information is obtained from schools and their contact information. The data collected is not protected and there are also no person-related questions addressed to the participants. This is also followed by the correspondence from NSD's assessment presented in the appendix.

## Findings

To present the findings prepared through interviews and statistics, they must first be described. In this sub-chapter, the interview guide will be used, the answers from the respondents have been processed according to coding. There will therefore be an overall response analysis of the interviews, as the majority of respondents had similar feedback. A few individual quotes from the respondents have been announced, these help to build up an overall picture.

It has emerged in the theoretical perspective chapter that pupils at secondary school are first presented with higher education at the start of the 8th grade, which is gradually stepped up with various work opportunities as the pupils approach the 10th grade and have to make a career choice.

*"Subject education choice in 8th half an hour a week, 9th one hour a week, and 10th stage half an hour a week."*

According to how the subject education choice is laid out and presented earlier, there is a focus on the student and how they should be able to develop through a process. This development is done over several years to train the child to think rationally about various topics.

*"8th grade - focus on identity, interests, strengths, characteristics, - who am I? Make a choice, job shadowing, profession of the week - video clips, the career buttons are introduced and visualized. Vocational practice in 9th grade, interdisciplinary week with a focus on educational choice, sustainability, opportunities. 10th grade - the main focus is on understanding the professions and making the right choice."*

The information used in the subject is focused on information that the advisers and subject teachers receive from the high schools, while the development program itself has been developed by the Directorate of Education to provide a basis for the shoes. The main focus is through the "nearby school principle", and these are also the schools that are visited by the young people. At the same time, the students have the opportunity to explore on their own through the internet sites vilbli.no and utdanning.no, also through job mapping pages online which have, among other things, surveys that give the young people options based on who they are both personally and by using interests.

*"In terms of information about studies, it is the adviser who gets it. Via the county, the schools, the admissions office, among other things."*

*"It varies from year to year depending on what offers the school gets."*

The nearby school principle is something that is used so that students do not have to travel long distances to be able to visit any schools of interest. But this can also be negative, as schools with a higher business density will be able to offer students a more varied presentation of career paths. It emerges from the interviews that there is a difference between the way the occupations are presented.

*"All the education programs in the upper secondary school have been invited into all 10th grade and have shown and told about all the possibilities within each program. It varies from year to year who we invite."*

In order for there to be as much balance as possible in who presents the education programs, the choice of education subject gives students the opportunity to apply for specific occupations regardless of the community school principle. In this way, students can have the opportunity to experience one of the lesser-known professions for the area in which the school is located.

*"In week 48, the students in the 10th grade will visit 2 different schools/educational programs at the high school. The students choose based on their interests/own wishes."*

Since it is such a big decision to choose a course of study, several secondary schools have made use of careers fairs.

*"We are currently planning a careers fair in the autumn for 10th grade, upper secondary and users of Nav in collaboration with business to promote jobs/companies and needs in our own municipality."*

The main purpose of educational choice is to make it easier for young people to make a choice in the 10th grade.

*"The aim is for them to have the best possible knowledge and information to be able to make a realistic and most correct choice for themselves."*

While it is important to get good information about the professions, it is also very important to look at who is communicating the information. The information presented by disengaged and outdated speakers will never be able to reach young people with short attention spans.

Young people need to be able to identify with the presenter. It is therefore very important to present the courses with role models that they can associate with.

*"One of these girls has also joined to talk about her race. I think it is very important in the future to recruit girls into the industry. Female role models."*

The reason why the advisors were contacted was to gain an understanding of what the students learned in relation to maritime education. Here there was a varied response spectrum. Based on previous information, it is very easy to assume that schools outside the immediate areas of maritime education had little or no promoters of information for students. While in the areas that had a higher business density of maritime influence also provided good opportunities for experiences and information about the maritime industry.

*"We select 17 students per school and together they are bussed out to a school ship. After the visit on board, each school selects 4 students who get to join the 2-day trip at the end of 9 stages."*

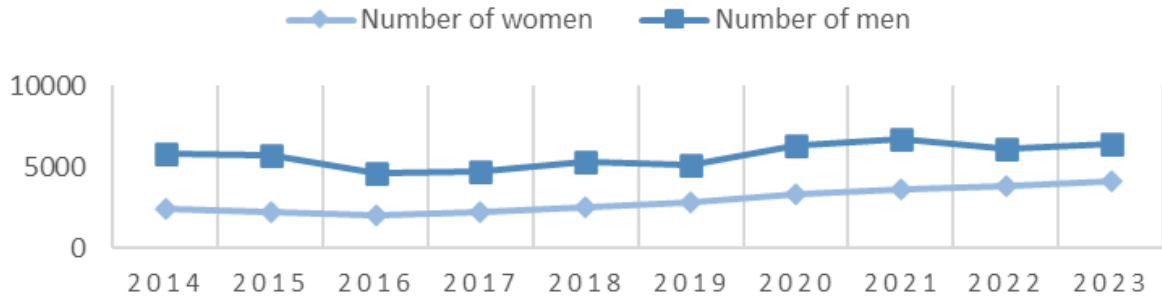
*"The students get to visit a ferry, the Rescue Society and the Coastal Administration - and thus get a good impression of the educational path. This is a scheme that the Seamen's Association is part of."*

## **Statistic data**

In order to get a more comprehensible picture of the status and historical development in relation to the decline and increase in applicants for the maritime studies, data from Statistics Norway (Statistisk sentralbyrå, n.d) and *Samordna Opptak* (Samordna opptak, n.d) has been used. A period of 10 years has been selected to get a better understanding of the findings. In this part of the thesis, an overall understanding of which studies take place within the maritime sector has been determined and an in depth list are in the appendix.

## **Applicants**

Presented in the data are both female and male applicants, but also findings from the public and the private schools trough Norway. The graph below shows the number of applicants divided by maritime studies to universities and colleges in the last 10 years.



*1 Growth index of applying to maritime studies*

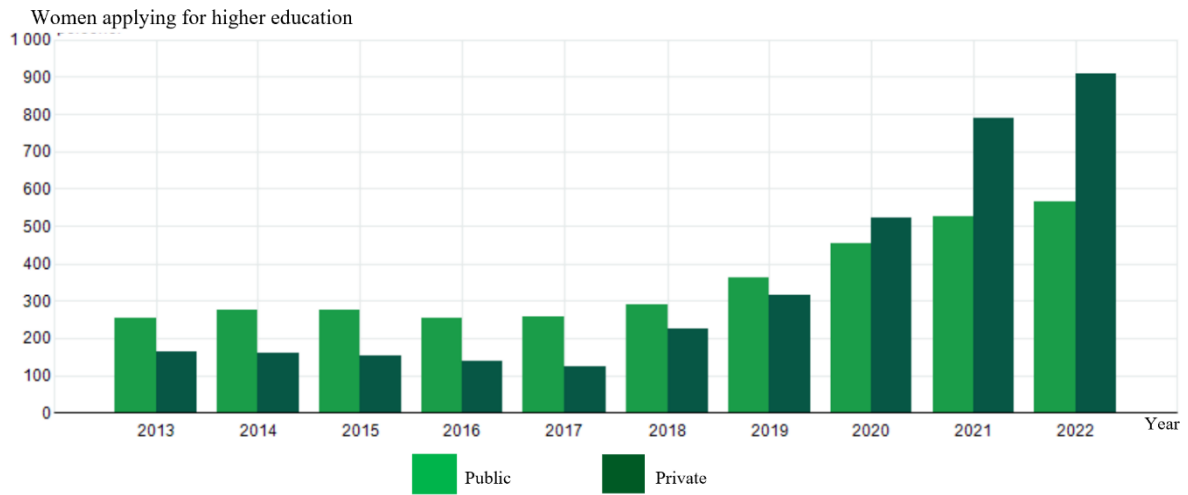
The graph (1) is showing a steady growth in number of women applying to a variety of maritime studies in Norway between 2014 and 2023. For the males there are some fluctuations, but it is still significant more men that are applying than females. The numbers used in the graph is presented in table 1.

Year	Number of women	Proportion of women	Number of men	Proportion of men	Total
2023	4119	38,93 %	6461	61,07 %	10580
2022	3817	38,32 %	6145	61,68 %	9962
2021	3622	35,17 %	6677	64,83 %	10299
2020	3286	34,15 %	6336	65,85 %	9622
2019	2812	35,46 %	5119	64,54 %	7931
2018	2550	32,38 %	5325	67,62 %	7875
2017	2264	32,46 %	4711	67,54 %	6975
2016	2026	30,65 %	4584	69,35 %	6610
2015	2179	27,55 %	5731	72,45 %	7910
2014	2387	29,25 %	5775	70,75 %	8162

*Table 1 Graph numbers*

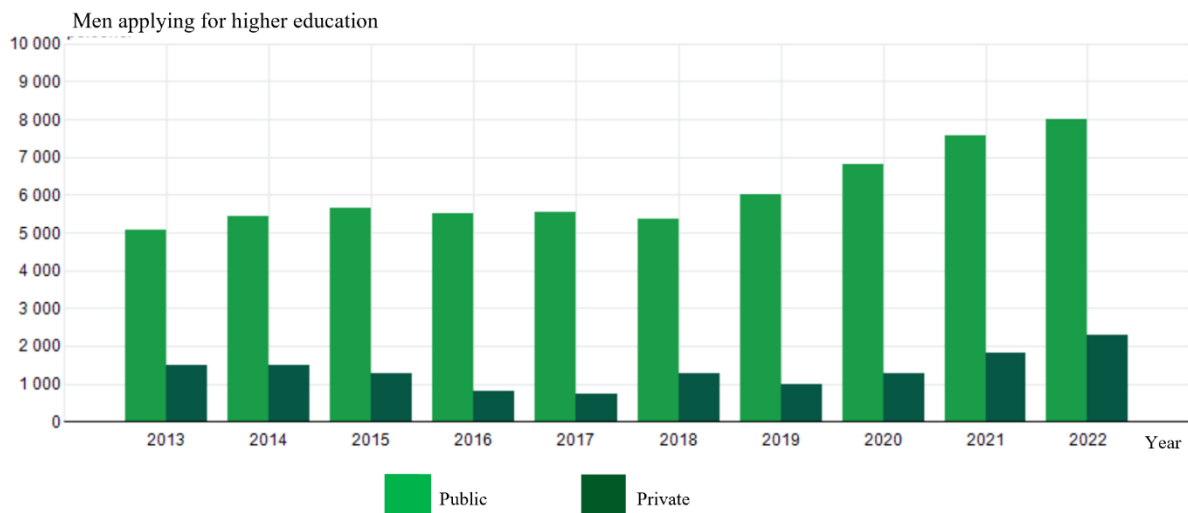
In this table a steady growth is shown from 2016 of women applying to the maritime studies and there are indicators that shows that there is a decline in male applicants to the same studies.

The diagram (2) below has a 10-year statistical period of the number of women applying for higher education in technology has increased (Diku, 2022). Represented in light green is the public school and dark green is the private school.



### *2 Women applying for higher education*

Below the same diagram is used, however in this the gender is altered (3). The number of males that apply to the same studies are higher in public schools than in the private (Diku, 2022). For females there are from 2013 to 2019 a higher number who apply to the public schools, but from 2020 to 2022 there are significant change and the private schools are more popular.



### *3 Men applying to a higher education*



## Analyzes

To get a more clear view of the topic the literature research report "Equality and diversity in maritime industry and education" a survey prepared by Østlandsforskning at The University College in Innlandet is used (Wold, Akin, Bern, Lauritzen, Tholstrup, & Alemayehu, 2022).

There is a common understanding from the interviews and the survey that you have to get in early to be able to influence career choices later. One of the advisers pointed out

*"When there are so many professions and future choices, it is difficult to be able to present everyone equally well, you do your best. But in most cases the students already have knowledge of what they want to be".*

In the survey, they indicate that there are challenges in recruiting students into maritime education, it is not just the girls they are missing but applicants. It is pointed out in the survey that it is challenging when advisers do not have prior knowledge of the maritime industry. A report was presented in 2019 by Basso, Espelien and Jacobsen regarding the quality of education in maritime higher education subjects and the decline in applicants for technical subjects due to a lack of national recruitment efforts, the negative repercussions of falling oil prices within Norway and that the flow of information is not good enough to promote path selection. Since the report was presented in 2019, several educational institutions have change their marketing and are now also using social media to promote their education. When schools use platforms such as Tik Tok and Instagram to promote studies, it provides a greater opportunity to reach the right audience. Among other things, USN has a group of students who post about their various studies, this directs the focus so that the person who follows gets the opportunity to join "behind the facade" of a student in a specific educational position. Role models can be a good way to promote positive attitudes and values. A role model is a someone that you look up to and in some ways copy their behavior (Merriam-Webster, n.d.)

Through the interviews with the advisers, they state that even with equal opportunities for all students through educational choices, they are still hindered in the form of the "*nearby school principle*". The principle is based on the schools that the secondary schools choose to visit being those that are nearby. It is therefore understood that the secondary schools that are not close to the maritime education program will not have the same opportunity to gain knowledge about the education. It emerges that the schools that are located near historically

established maritime institutions have an increased advantage since they are offered job shadowing, visits by key maritime personnel and speakers from the industry.

*“They also get to visit a ferry, the Rescue Society and the Coastal Administration - and thus get a good impression of the education route. This is an arrangement that the Seamen's Association is part of. They also inform the parents.”*

But this is also reflected for schools where other industries have an advantage, they give back by recruiting heavily for their industry.

The proportion of women among applicants has been stable over a period of time, at around 24% within universities and colleges. An increasing trend is observed within vocational maritime education with a greater proportion of female applicants with an increase of 3 % from the last year as shown in the findings (Diku, 2022).

## **Discussion**

To be able to answer the research question "How can the number of female applicants for maritime studies be increased?" are there several measures that contribute to being able to sum up the answer.

The question itself is as big now as it was at the start. However, with the information obtained from the literature and from reports there are some measures which can be implemented that will be able to promote the increase. It is important to focus on an overall picture in order to achieve a positive ending. Therefore, one must look at the topic according to different parts.

### **Culturally**

Through the literature, one gets an understanding that culture and cultural understanding have weight in relation to the research question. Culture has been presented earlier in the thesis according to Edgar Schein's understanding of the word. The maritime culture deals with individuals who together have the same assumptions and will therefore work to solve problems in the same way. This can be both positive, as the interaction creates good working dynamics and cohesion. But it can also promote a negative attitude. Attitudes that can be obstacles to future-oriented thinking, changes in "how it has always been" and in relation to how the industry is viewed. Culture is not only the common understanding, but also how norms, values and the artefacts are developed within the maritime industry across the very professions that reformulate the industry. These affect both internally and externally. It is therefore very important to promote inclusion, equality and skills development. By highlighting women in visible roles, you will help promote a change in attitude. The women thus become natural role models for newcomers and assumptions that were previously the norm are rejected. By promoting such a change, the maritime industry will not only be innovative in technology development, but also through a forward-looking focus on gender equality.

Since the report was presented, several educational institutions have used social media to promote their education. When schools use platforms such as Tik Tok and Instagram to promote studies, it provides a greater opportunity to reach out to the public. USN today has a group of students who post about their various studies, this directs the focus so that the person who follows along gets someone to relate to.

## **Relationally**

Relational behavior is quite important in interactions. This is because relational competence is based on the ability to communicate effectively with empathy, in other words it is the ability to face situations with respect and recognition in the face of other individuals who have a different culture, attitude or understanding of life than yourself. (Jacobsen & Thorsvik, 2013, p. 130 - 134). This perspective of the overall picture is important in order to promote good interaction and negotiations within the maritime industry. With a good dialogue, you can promote and prevent forms of action that may previously have been the norm. As previously mentioned, the maritime industry is characterized by generational norms that are not suitable in today's standards. It is therefore important to show a clear line against bullying and harassment, which is often in correlation with generational thoughts such as "*women cannot work at sea, they are not strong enough*".

## **Structurally**

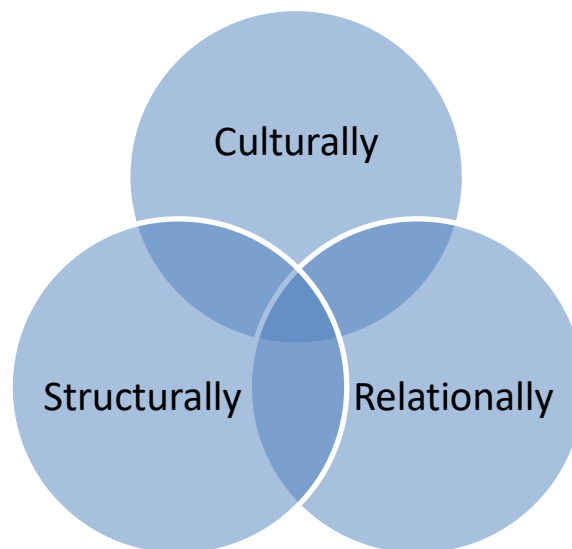
Structure is within all industries, it is the foundation of how it is structured. It is therefore easy to think about politics, goals and strategies when trying to explain the thinking behind the structure. When the research question is in focus, you can see that there are several fundamental changes that are needed to promote change.

First and foremost, the maritime industry must work actively to equalize pay differences, because there is and has been a long history of large differences between men and women who perform the same work at different pay levels. In the light of equality, this should be made clear. But it is not only wage differences that have negative consequences. Studies show that it is not as well organized for women in terms of clothing and equipment that fits. This is very demotivating for those who have to carry out work and helps to prevent changes in attitude, as the employee does not get to carry out his work on the same level as those who have everything in order.

As mentioned, it is a recommendation to place more women in positions of importance, this will in the long run also increase the proportion of women because you get role models. Through mentor programs, follow-up and training quality of knowledge can be heightened. By using a mentor program you can increase interest and focus. It can be very frightening to stand as a recent graduate or in the career selection phase without someone to show you the way. This can be a recruitment strategy by promoting the maritime industry through workers

who practice the profession. As mentioned earlier, it is very important to start early in promoting knowledge of career choices and it can therefore be very effective to promote role models through social media to show "behind the facade" of a profession within the maritime industry.

By bringing the three parts together, you get an overall picture of the research question.



One of the questions that was asked in the beginning was: *What is provided to the pupils and students in regards to maritime studies?* In the findings the topic is mentioned and it correlates in regards to the curriculum of the study. One can always discuss the extent to which the information is emphasized. Is it promoted based on how popular it is or not. This means that studies with little focus on are less promoted than others. This can be a indicator by promoting the generational gender stereotypes and not promote innovative growth in society.

## **Conclusion**

*How can the number of female applicants for maritime studies be increased?*

First and foremost, the maritime industry must work to break down the myths about women in the maritime industry. Along with the generational shift the industry is facing, it will be easier to change the unwritten norms set from old thinking by addressing the mental barrier that has been set up over generations. There is a lot in expressing opinions and attitudes, but nothing is better than showing it with action. It is therefore very important to put the genders on an equal footing, to show that physical differences are not obstacles and offer the right equipment to carry out the work efficiently and satisfactorily, regardless of the person who will carry it out. In order to attract more girls to the maritime industry, it would be wise to use role models. They will be able to tell how it is to work within the industry and show that girls have a place within the industry. By using girls to recruit girls, the industry shows a change not only to those who will apply but also to the generation above.

## **Limitations**

There will always be some limitations with any research. Here one must firstly look at the data samples, literature and the researchers own understanding of how to process the data. This master thesis has its time limits and will therefore reflect that. Because the topic is popular, other studies are published in the same time

## **Future research**

Even if the topic is popular in today's eyes, it will be very important for the industry as a whole to implement the changes and also chart further developments. It is said that "out of sight, out of mind" and this applies just as well to the theme. It is therefore important to promote difficult topics and hold those who have the opportunity to change the situation accountable. At the same time, it is important to inform parents about being more responsible in relation to obtaining information.

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# Appendix

## Appendix 1; Reading list

Title	Autor	Year	Books	
			Relevance	About
Women sailors & sailors' women	David Cordingly	2001	2	This book presents 300 years of women that are pioneering as pirates, captains, seafarers in a highly man dominated world.
Maritime women : global leadership: Vol. vol. 3.	Momoko Kitada, Erin Williams, Lisa Loloma Froholdt	2015	4	This book is about women in the maritime sector on a international level. It focuses on leadership and service that the women achieve and provide. The book follows women in the industry and how the integration, politics, education, sustainability and employment is handled.
Women of the sea: out and at home	Elisabeth Lønnå	2010	9	A historical narrative about the efforts of women in and for the Norwegian merchant fleet over 100 years.

<b>Research papers</b>				
<b>Title</b>	<b>Autor</b>	<b>Year</b>	<b>Relevance</b>	<b>About</b>
Gender equality in marine sciences in Kiel, Germany: How project-funded measures can urge institutions to act	Kamm, Ruth, Schelten, Christiane K. and Braker, Gesche	2020	2	A research article about gender imbalance and how the focus are on the gender equality activities of the two large externally funded marine sciences research alliances.
The gender equality in maritime industries: Transnational law perspectives	Liudmyla Kormych	2020	3	The article presents a indebt examination of the international legal framework for gender equality in the maritime industry.
Pupils' transition between secondary school and upper secondary school, from three advisers perspective	André Kjærvik Swiboda	2020	3	This is a master thesis it focuses how the pupils can develop their career knowledge and how the career guide is important.
A limitless career? : A study of individual employees' career changes within Norwegian knowledge-intensive sectors	Thomas Bertelsen	2011	4	This is a master thesis that focuses on career changes within sectors with extensive knowledge bases
Vocational school education - relevant for the labor market?	Liv Anne Støren og Erica Waagene	2015	5	In this study the authors are researching the fact that the students that are studying a vocational school education is also studies further after completing studies.
Maritime education in light of globalization	Bjørn Magne Aakre	2015	5	This article illuminates the relationship between education and globalization with the maritime sector as context.
Early Modern Maritime Societies	Finn-Einar Eliassen	2019	5	This is an article that is looking at the term maritime society. Here the author is reflecting on a early modern period in the Norwegian coastal regions in relations with international literature.
Quality in career guidance in schools	Siri Mordal, Anne Holm-Nordhagen, Ida Holth Mathiesen, Trond Buland and Rie Thomsen	2022	6	An investigation of quality and quality development in career guidance in school
Norway in transition – career guidance for individuals and society	NOU - Norges offentlige utredninger	2016	7	This presents a set of recommendations that are in relations to a nation in transition. It highlights how to better the system on several levels.
Justice and gender balance at universities	Åse Røthing	2012	7	This article is focusing on what will be achieved if a gender balanced is achieved.
Career development for women in maritime industry: organization and socialization perspectives	Chia-Ling Wu, Shiou-Yu Chen, Kung-Don Ye & Yi-Wei Ho	2017	8	This research is focusing on filling out the blank history knowledge of women in the maritime industry.

<b>Rapports and Statistics</b>				
<b>Title</b>	<b>Autor</b>	<b>Year</b>	<b>Relevance</b>	<b>About</b>
Equality and diversity in the maritime industry and education - a survey	Lisa Knatterud Wold, Deniz Akin, Aleksander Bern, Tonje Lauritzen, Line Marie Tholstrup and Fikru Kefyalew Alemayehu	2022	6	This survey the development of gender and diversity in the maritime sector and education. The report summarize the gathered knowledge from interviews and focus groups.
Competence and competence needs in vocational schools	Rønnaug H. Lyckander and Sidsel Øiestad Grande	2018	6	This report assessing the competence requirements. The report shows results from a survey of academic and pedagogical competence
Number of applicants to higher vocational education at vocational schools April 2022	Direktoratet for høyere utdanning og kompetanse	2022	8	The numbers in the factual note are registration numbers, and those are the applicants even if they have registeredits application. These figures therefore mainly show the interest in the various studies, and not which study places will be filled
Applicant and admission statistics 2020 – final report	Direktoratet for høyere utdanning og kompetanse	2020	9	Final statistics for 2020
Admission to undergraduate studies at universities and colleges	Direktoratet for høyere utdanning og kompetanse	2020	9	Statistic of undergraduate studies at universities
Applicant and admission statistics 2020	Direktoratet for høyere utdanning og kompetanse	2020	9	Final statistics for 2019
Applicant and admission statistics 2021	Direktoratet for høyere utdanning og kompetanse	2021	9	Final statistics for 2021
Admission to higher vocational education at vocational schools June 2021	Direktoratet for IKT og fellestjenester i høyere utdanning og forskning	2021	9	Final statistics for 2020
High labor market relevance in vocational school education: Candidate survey for vocational school graduates in 2019 and 2020	Alne, Ragnar; Vika, Karl Solbue; Høst, Håkon	2023	9	The fifth candidate survey for vocational school graduates in 2019 and 2020

## **Appendix 2; Interview guide:**

When does the introduction to further education start?

Has the school received specific information about different educations?

Where does the information about the various career paths come from?

What is the information (can you attach a link or the documentation)?

Is the information obtained by a subject teacher or similar?

Which schools are attended by the students?

How are the visiting schools chosen?

Is there another arrangement that is carried out in accordance with further education?

	<b>Question</b>	<b>Guide code</b>
Q1	When does the introduction to further education start?	Startup
Q2	Has the school received specific information about different educations?	Information
Q3	Where does the information about the various career paths come from?	Information
Q4	What is the information provided to the pupils? Can you attach a link or the documentation	Information
Q5	Which schools are attended by the students?	Visit
Q6	How are the visiting schools chosen?	Visit
Q7	Is there another arrangement that is carried out in accordance with further education?	Guidance

## Appendix 3; NSD assessment



### NSD's assessment

#### Project title

“How to increase the number of female applicants for maritime studies”

#### Reference number

394140

#### Registered

25.03.2023 by Miriam Røed-Vikøren, miriamroedvikoren@hotmail.com, phone: 92849584

#### Institution responsible for processing

The University of Southeast Norway / Faculty of Technology, Natural Sciences and Maritime Studies / Department of Maritime Operations

#### Project manager (scientific employee/supervisor or research fellow)

Anne Kari Botnmark , Anne.Kari.Botnmark@usn.no, tlf: 99377872

#### Type of project

Student project, master's study

#### Contact information, student

Miriam Røed-Vikøren, miriamroedvikoren@hotmail.com, phone: 92849584

#### Project period

01.12.2022 - 31.07.2023

#### Status

- Assessed

#### Consideration

It is clear from the registration form with attachments and dialogue that no information shall be processed in the project that can identify individuals either directly or indirectly.

The project therefore does not need an assessment from Personal Protection Services.

#### WHAT DO YOU HAVE TO DO IF YOU STILL NEED TO PROCESS PERSONAL DATA?

If the project plan changes and it nevertheless becomes relevant to process personal data, you must notify us of this by updating the notification form. Wait for a response before starting the processing of personal data.

#### WE TERMINATE FOLLOW-UP OF THE PROJECT

Since the project does not process personal data, we are ending all further follow-up.

With best regards

Silje Fjelberg Opsvik,

senior advisor for privacy services

## Appendix 4; Female applicants to collages

Place of learning	Studies	Year	Measure Values
HINN	Jakt, fiske og naturveiledning	2023	48
HINN	Jakt, fiske og naturveiledning	2022	60
HINN	Jakt, fiske og naturveiledning	2021	67
HINN	Jakt, fiske og naturveiledning	2020	71
HINN	Jakt, fiske og naturveiledning	2019	69
HINN	Jakt, fiske og naturveiledning	2017	46
HINN	Jakt, fiske og naturveiledning	2015	45
HINN	Jakt, fiske og naturveiledning	2014	43
HINN	Årsstudium i vilt- og fiskeforvaltning, Evenstad	2014	36
HVL	Ingeniør, marinteknikk	2023	94
HVL	Ingeniør, marinteknikk	2022	74
HVL	Ingeniør, marinteknikk	2021	64
HVL	Ingeniør, marinteknikk	2020	80
HVL	Ingeniør, marinteknikk	2019	61
HVL	Ingeniør, marinteknikk	2018	69
HVL	Ingeniør, marinteknikk	2017	73
HVL	Ingeniør, marinteknikk	2016	103
HVL	Ingeniør, marinteknikk	2015	154
HVL	Ingeniør, marinteknikk	2014	171
HVL	Nautikk med integrert praksis	2023	123
HVL	Nautikk med integrert praksis	2022	98
HVL	Ingeniør, havteknologi	2023	136
HVL	Ingeniør, havteknologi	2022	132
HVL	Ingeniør, havteknologi	2021	93
HVL	Ingeniør, havteknologi	2020	132
HVL	Ingeniør, havteknologi	2019	116
HVL	Ingeniør, havteknologi	2018	101
HVL	Ingeniør, havteknologi	2017	63
HVL	Ingeniør, havteknologi	2016	80
HVL	Ingeniør, havteknologi	2015	148
HVL	Ingeniør, havteknologi	2014	215

HVL	Nautikk	2021	89
HVL	Nautikk	2020	66
HVL	Nautikk	2019	64
HVL	Nautikk	2018	57
HVL	Nautikk	2017	54
HVL	Ingeniør, havteknologi, Kristiansund	2019	12
HVL	Ingeniør, havteknologi, Kristiansund	2018	13
HVL	Ingeniør, havteknologi, Kristiansund	2017	3
HVL	Ingeniør, havteknologi, Kristiansund	2016	16
HVL	Ingeniør, havteknologi, Kristiansund	2015	31
HVL	Ingeniør, havteknologi, Florø	2019	11
HVL	Ingeniør, havteknologi, Florø	2018	8
HVL	Ingeniør, havteknologi, Florø	2017	5
HVL	Ingeniør, havteknologi, Florø	2016	20
HVL	Ingeniør, havteknologi, Florø	2015	35
HVL	Ingeniør, havteknologi, Florø	2014	45
HVL	Nautikk (Sjøoffiser)	2016	58
HVL	Nautikk (Sjøoffiser)	2015	72
HVL	Nautikk (Sjøoffiser)	2014	79
NORD	Nautikk, maritim økonomi og ledelse	2016	38
NORD	Nautikk, maritim økonomi og ledelse	2014	55
NORD	Havbruksdrift og ledelse	2023	396
NORD	Havbruksdrift og ledelse	2022	343
NORD	Havbruksdrift og ledelse	2021	391
NORD	Havbruksdrift og ledelse	2020	351
NORD	Havbruksdrift og ledelse	2019	293
NORD	Havbruksdrift og ledelse	2018	251
NORD	Havbruksdrift og ledelse	2017	191
NORD	Havbruksdrift og ledelse	2016	150
NORD	Havbruksdrift og ledelse	2015	138
NORD	Havbruksdrift og ledelse	2014	90
NTNU	Ingeniør, havbruk	2023	259
NTNU	Ingeniør, havbruk	2022	279
NTNU	Ingeniør, havbruk	2021	208



NTNU	Ingeniør, havbruk	2020	288
NTNU	Shippingledelse	2019	158
NTNU	Shippingledelse	2018	131
NTNU	Shippingledelse	2017	126
NTNU	Shippingledelse	2016	134
NTNU	Nautikk	2023	153
NTNU	Nautikk	2022	126
NTNU	Nautikk	2021	135
NTNU	Nautikk	2020	88
NTNU	Nautikk	2019	106
NTNU	Nautikk	2018	88
NTNU	Nautikk	2017	73
NTNU	Nautikk	2016	72
NTNU	Shipping management	2023	605
NTNU	Shipping management	2022	492
NTNU	Shipping management	2021	501
NTNU	Shipping management	2020	339
NTNU	Shipping management	2019	314
NTNU	Shipping management	2018	280
NTNU	Shipping management	2017	232
NTNU	Shipping management	2016	235
NTNU	Marin teknikk	2023	482
NTNU	Marin teknikk	2022	418
NTNU	Marin teknikk	2021	363
NTNU	Marin teknikk	2020	394
NTNU	Marin teknikk	2019	356
NTNU	Marin teknikk	2018	313
NTNU	Marin teknikk	2017	274
NTNU	Marin teknikk	2016	311
NTNU	Marin teknikk	2015	434
NTNU	Marin teknikk	2014	537
NTNU	Shippingledelse, årsstudium	2015	127
NTNU	Shippingledelse, årsstudium	2014	122
NTNU	Nautikk (Skipsfører)	2015	80

NTNU	Nautikk (Skipsfører)	2014	68
NTNU	Shipping management	2015	325
NTNU	Shipping management	2014	254
UIB	Havbruk (sivilingeniør)	2023	207
UIB	Havbruk (sivilingeniør)	2022	232
UIB	Havbruk (sivilingeniør)	2021	116
UIB	Havbruk (sivilingeniør)	2020	120
UIB	Havbruk (sivilingeniør)	2019	97
UIB	Havbruk (sivilingeniør)	2018	95
UIB	Havbruk (sivilingeniør)	2017	100
UIB	Havbruk (sivilingeniør)	2016	101
UIB	Havteknologi	2023	178
UIB	Havteknologi	2022	212
UIB	Havteknologi	2021	196
UIB	Havteknologi	2020	189
UIB	Havteknologi	2019	193
UIB	Havteknologi	2018	151
UIB	Havteknologi	2017	131
UIB	Fiskehelse - akvamedisin	2023	299
UIB	Fiskehelse - akvamedisin	2022	335
UIB	Fiskehelse - akvamedisin	2021	238
UIB	Fiskehelse - akvamedisin	2020	228
UIB	Fiskehelse - akvamedisin	2019	144
UIB	Fiskehelse - akvamedisin	2018	228
UIB	Fiskehelse - akvamedisin	2017	195
UIB	Fiskehelse - akvamedisin	2016	119
UIB	Fiskehelse - akvamedisin	2015	93
UIB	Fiskehelse - akvamedisin	2014	62
UIB	Klima-, atmosfære- og havfysikk	2023	123
UIB	Klima-, atmosfære- og havfysikk	2022	129
UIB	Klima-, atmosfære- og havfysikk	2021	144
UIB	Klima-, atmosfære- og havfysikk	2020	168
UIB	Klima-, atmosfære- og havfysikk	2019	159
UIB	Klima-, atmosfære- og havfysikk	2018	155

UIB	Klima-, atmosfære- og havfysikk	2017	158
UIB	Klima-, atmosfære- og havfysikk	2016	170
UIB	Klima-, atmosfære- og havfysikk	2015	207
UIB	Klima-, atmosfære- og havfysikk	2014	193
UIS	Marin- og offshoreteknologi	2021	37
UIS	Marin- og offshoreteknologi	2020	58
UIS	Marin- og offshoreteknologi	2019	38
UIS	Marin- og offshoreteknologi	2018	55
UIS	Marin- og offshoreteknologi	2017	44
UIS	Marin- og offshoreteknologi	2016	41
UIS	Marin- og offshoreteknologi	2015	93
UIS	Marin- og offshoreteknologi	2014	179
UIT	Ingeniør, havteknologi	2023	44
UIT	Ingeniør, havteknologi	2022	53
UIT	Ingeniør, havteknologi	2021	69
UIT	Nautikk	2023	58
UIT	Nautikk	2022	34
UIT	Nautikk	2021	45
UIT	Nautikk	2020	28
UIT	Nautikk	2019	18
UIT	Nautikk	2018	21
UIT	Nautikk	2017	28
UIT	Nautikk	2016	30
UIT	Nautikk	2015	24
UIT	Nautikk	2014	24
UIT	Fiskeri- og havbruksvitenskap	2023	498
UIT	Fiskeri- og havbruksvitenskap	2022	449
UIT	Fiskeri- og havbruksvitenskap	2021	514
UIT	Fiskeri- og havbruksvitenskap	2020	466
UIT	Fiskeri- og havbruksvitenskap	2019	393
UIT	Fiskeri- og havbruksvitenskap	2018	387
UIT	Fiskeri- og havbruksvitenskap	2017	390
UIT	Fiskeri- og havbruksvitenskap	2016	222
UIT	Fiskeri- og havbruksvitenskap	2015	193

UIT	Fiskeri- og havbruksvitenskap	2014	159
USN	Skipsfart og logistikk	2023	291
USN	Skipsfart og logistikk	2022	247
USN	Skipsfart og logistikk	2021	243
USN	Skipsfart og logistikk	2020	148
USN	Skipsfart og logistikk	2019	139
USN	Skipsfart og logistikk	2018	95
USN	Skipsfart og logistikk	2017	75
USN	Skipsfart og logistikk	2016	74
USN	Skipsfart og logistikk	2015	113
USN	Skipsfart og logistikk	2014	109
USN	Marinteknisk drift	2023	39
USN	Marinteknisk drift	2022	43
USN	Marinteknisk drift	2021	28
USN	Marinteknisk drift	2020	30
USN	Marinteknisk drift	2019	28
USN	Marinteknisk drift	2018	23
USN	Marinteknisk drift	2017	13
USN	Marinteknisk drift	2016	14
USN	Marinteknisk drift	2015	21
USN	Marinteknisk drift	2014	30
USN	Nautikk	2023	86
USN	Nautikk	2022	61
USN	Nautikk	2021	81
USN	Nautikk	2020	42
USN	Nautikk	2019	43
USN	Nautikk	2018	29
USN	Nautikk	2017	36
USN	Nautikk	2016	38
USN	Nautikk	2015	45
USN	Nautikk	2014	50

## Appendix 5; Male applicants to collages

Place of learning	Studies	Year	Measure Values
HINN	Jakt, fiske og naturveiledning	2023	79
HINN	Jakt, fiske og naturveiledning	2022	115
HINN	Jakt, fiske og naturveiledning	2021	102
HINN	Jakt, fiske og naturveiledning	2020	131
HINN	Jakt, fiske og naturveiledning	2019	94
HINN	Jakt, fiske og naturveiledning	2017	112
HINN	Jakt, fiske og naturveiledning	2015	110
HINN	Jakt, fiske og naturveiledning	2014	137
HINN	Årsstudium i vilt- og fiskeforvaltning, Evenstad	2014	79
HVL	Ingeniør, marinteknikk	2023	238
HVL	Ingeniør, marinteknikk	2022	206
HVL	Ingeniør, marinteknikk	2021	219
HVL	Ingeniør, marinteknikk	2020	253
HVL	Ingeniør, marinteknikk	2019	209
HVL	Ingeniør, marinteknikk	2018	251
HVL	Ingeniør, marinteknikk	2017	215
HVL	Ingeniør, marinteknikk	2016	284
HVL	Ingeniør, marinteknikk	2015	419
HVL	Ingeniør, marinteknikk	2014	491
HVL	Nautikk med integrert praksis	2023	332
HVL	Nautikk med integrert praksis	2022	328
HVL	Ingeniør, havteknologi	2023	263
HVL	Ingeniør, havteknologi	2022	238
HVL	Ingeniør, havteknologi	2021	250
HVL	Ingeniør, havteknologi	2020	249
HVL	Ingeniør, havteknologi	2019	248
HVL	Ingeniør, havteknologi	2018	274
HVL	Ingeniør, havteknologi	2017	201
HVL	Ingeniør, havteknologi	2016	338
HVL	Ingeniør, havteknologi	2015	438

HVL	Ingeniør, havteknologi	2014	568
HVL	Nautikk	2021	374
HVL	Nautikk	2020	291
HVL	Nautikk	2019	274
HVL	Nautikk	2018	243
HVL	Nautikk	2017	238
HVL	Ingeniør, havteknologi, Kristiansund	2019	17
HVL	Ingeniør, havteknologi, Kristiansund	2018	38
HVL	Ingeniør, havteknologi, Kristiansund	2017	3
HVL	Ingeniør, havteknologi, Kristiansund	2016	50
HVL	Ingeniør, havteknologi, Kristiansund	2015	125
HVL	Ingeniør, havteknologi, Florø	2019	20
HVL	Ingeniør, havteknologi, Florø	2018	25
HVL	Ingeniør, havteknologi, Florø	2017	15
HVL	Ingeniør, havteknologi, Florø	2016	62
HVL	Ingeniør, havteknologi, Florø	2015	137
HVL	Ingeniør, havteknologi, Florø	2014	222
HVL	Nautikk (Sjøoffiser)	2016	249
HVL	Nautikk (Sjøoffiser)	2015	345
HVL	Nautikk (Sjøoffiser)	2014	301
NORD	Nautikk, maritim økonomi og ledelse	2016	142
NORD	Nautikk, maritim økonomi og ledelse	2014	174
NORD	Havbruksdrift og ledelse	2023	402
NORD	Havbruksdrift og ledelse	2022	385
NORD	Havbruksdrift og ledelse	2021	490
NORD	Havbruksdrift og ledelse	2020	490
NORD	Havbruksdrift og ledelse	2019	444
NORD	Havbruksdrift og ledelse	2018	437
NORD	Havbruksdrift og ledelse	2017	351
NORD	Havbruksdrift og ledelse	2016	241
NORD	Havbruksdrift og ledelse	2015	197
NORD	Havbruksdrift og ledelse	2014	120
NTNU	Ingeniør, havbruk	2023	370
NTNU	Ingeniør, havbruk	2022	353

NTNU	Ingeniør, havbruk	2021	350
NTNU	Ingeniør, havbruk	2020	513
NTNU	Shippingledelse	2019	199
NTNU	Shippingledelse	2018	194
NTNU	Shippingledelse	2017	177
NTNU	Shippingledelse	2016	190
NTNU	Nautikk	2023	413
NTNU	Nautikk	2022	388
NTNU	Nautikk	2021	408
NTNU	Nautikk	2020	384
NTNU	Nautikk	2019	306
NTNU	Nautikk	2018	348
NTNU	Nautikk	2017	306
NTNU	Nautikk	2016	348
NTNU	Shipping management	2023	1132
NTNU	Shipping management	2022	981
NTNU	Shipping management	2021	989
NTNU	Shipping management	2020	769
NTNU	Shipping management	2019	621
NTNU	Shipping management	2018	535
NTNU	Shipping management	2017	487
NTNU	Shipping management	2016	422
NTNU	Marin teknikk	2023	826
NTNU	Marin teknikk	2022	754
NTNU	Marin teknikk	2021	702
NTNU	Marin teknikk	2020	864
NTNU	Marin teknikk	2019	877
NTNU	Marin teknikk	2018	819
NTNU	Marin teknikk	2017	721
NTNU	Marin teknikk	2016	707
NTNU	Marin teknikk	2015	1049
NTNU	Marin teknikk	2014	1085
NTNU	Shippingledelse, årsstudium	2015	170
NTNU	Shippingledelse, årsstudium	2014	166

NTNU	Nautikk (Skipsfører)	2015	374
NTNU	Nautikk (Skipsfører)	2014	300
NTNU	Shipping management	2015	499
NTNU	Shipping management	2014	383
UIB	Havbruk (sivilingeniør)	2023	200
UIB	Havbruk (sivilingeniør)	2022	201
UIB	Havbruk (sivilingeniør)	2021	120
UIB	Havbruk (sivilingeniør)	2020	113
UIB	Havbruk (sivilingeniør)	2019	94
UIB	Havbruk (sivilingeniør)	2018	103
UIB	Havbruk (sivilingeniør)	2017	116
UIB	Havbruk (sivilingeniør)	2016	92
UIB	Havteknologi	2023	295
UIB	Havteknologi	2022	262
UIB	Havteknologi	2021	315
UIB	Havteknologi	2020	281
UIB	Havteknologi	2019	279
UIB	Havteknologi	2018	228
UIB	Havteknologi	2017	204
UIB	Fiskehelse - akvamedisin	2023	126
UIB	Fiskehelse - akvamedisin	2022	131
UIB	Fiskehelse - akvamedisin	2021	132
UIB	Fiskehelse - akvamedisin	2020	135
UIB	Fiskehelse - akvamedisin	2019	79
UIB	Fiskehelse - akvamedisin	2018	140
UIB	Fiskehelse - akvamedisin	2017	145
UIB	Fiskehelse - akvamedisin	2016	113
UIB	Fiskehelse - akvamedisin	2015	86
UIB	Fiskehelse - akvamedisin	2014	60
UIB	Klima-, atmosfære- og havfysikk	2023	50
UIB	Klima-, atmosfære- og havfysikk	2022	65
UIB	Klima-, atmosfære- og havfysikk	2021	69
UIB	Klima-, atmosfære- og havfysikk	2020	86
UIB	Klima-, atmosfære- og havfysikk	2019	80



UIB	Klima-, atmosfære- og havfysikk	2018	90
UIB	Klima-, atmosfære- og havfysikk	2017	93
UIB	Klima-, atmosfære- og havfysikk	2016	100
UIB	Klima-, atmosfære- og havfysikk	2015	112
UIB	Klima-, atmosfære- og havfysikk	2014	95
UIS	Marin- og offshoreteknologi	2021	137
UIS	Marin- og offshoreteknologi	2020	137
UIS	Marin- og offshoreteknologi	2019	141
UIS	Marin- og offshoreteknologi	2018	124
UIS	Marin- og offshoreteknologi	2017	108
UIS	Marin- og offshoreteknologi	2016	137
UIS	Marin- og offshoreteknologi	2015	386
UIS	Marin- og offshoreteknologi	2014	549
UIT	Ingeniør, havteknologi	2023	71
UIT	Ingeniør, havteknologi	2022	89
UIT	Ingeniør, havteknologi	2021	126
UIT	Nautikk	2023	140
UIT	Nautikk	2022	142
UIT	Nautikk	2021	161
UIT	Nautikk	2020	111
UIT	Nautikk	2019	100
UIT	Nautikk	2018	145
UIT	Nautikk	2017	102
UIT	Nautikk	2016	131
UIT	Nautikk	2015	137
UIT	Nautikk	2014	130
UIT	Fiskeri- og havbruksvitenskap	2023	410
UIT	Fiskeri- og havbruksvitenskap	2022	463
UIT	Fiskeri- og havbruksvitenskap	2021	561
UIT	Fiskeri- og havbruksvitenskap	2020	592
UIT	Fiskeri- og havbruksvitenskap	2019	487
UIT	Fiskeri- og havbruksvitenskap	2018	590
UIT	Fiskeri- og havbruksvitenskap	2017	574
UIT	Fiskeri- og havbruksvitenskap	2016	334

UIT	Fiskeri- og havbruksvitenskap	2015	294
UIT	Fiskeri- og havbruksvitenskap	2014	195
USN	Skipsfart og logistikk	2023	682
USN	Skipsfart og logistikk	2022	615
USN	Skipsfart og logistikk	2021	661
USN	Skipsfart og logistikk	2020	519
USN	Skipsfart og logistikk	2019	443
USN	Skipsfart og logistikk	2018	416
USN	Skipsfart og logistikk	2017	258
USN	Skipsfart og logistikk	2016	300
USN	Skipsfart og logistikk	2015	321
USN	Skipsfart og logistikk	2014	337
USN	Marinteknisk drift	2023	132
USN	Marinteknisk drift	2022	127
USN	Marinteknisk drift	2021	148
USN	Marinteknisk drift	2020	134
USN	Marinteknisk drift	2019	108
USN	Marinteknisk drift	2018	93
USN	Marinteknisk drift	2017	87
USN	Marinteknisk drift	2016	97
USN	Marinteknisk drift	2015	180
USN	Marinteknisk drift	2014	180
USN	Nautikk	2023	300
USN	Nautikk	2022	302
USN	Nautikk	2021	363
USN	Nautikk	2020	284
USN	Nautikk	2019	273
USN	Nautikk	2018	232
USN	Nautikk	2017	198
USN	Nautikk	2016	247
USN	Nautikk	2015	352
USN	Nautikk	2014	333