# THE IMPACT OF CULTURAL AND GENDER DIVERSITY ON MARITIME EDUCATION

# AND TRAINING: A QUALITATIVE STUDY

A dissertation
Presented to the Faculty of the ---------University
In partial fulfillment of the requirements for the degree of
[Doctor of Philosophy (Ph.D.)] in [insert Program name]

Date

Approval of the Dissertation

THE IMPACT OF CULTURAL AND GENDER DIVERSITY ON MARITIME EDUCATION

AND TRAINING: A QUALITATIVE STUDY

This <u>Dissertation</u> by <u>Name of the Candidate</u> has been approved by the committee members below, who recommend it be accepted by the faculty of ---------- University in partial fulfillment of requirements for the degree of

Doctor of Philosophy in [insert appropriate degree]

<u>Dissertation Committee</u>:

First and Last name, Ph.D., Chair                Date

First and Last name, Ph.D.                Date

First and Last name, Ph.D.                Date

Abstract

The Impact Of Cultural And Gender Diversity On Maritime Education And Training: A

Qualitative Study

This study investigates the impact of cultural and gender diversity on maritime education and

training. With the maritime industry being an essential part of global trade, ensuring that

individuals from all backgrounds can access and benefit from educational opportunities in this

field is important. This study aims to explore how cultural and gender diversity can shape

maritime education and training, as well as the potential challenges and opportunities this

presents. Fifty participants from different marine organizations participated in semi-structured

interviews as part of the study's qualitative methodology. The participants' perspectives on the

effects of cultural and gender diversity in the marine industry, along with their recommendations

for increasing diversity in education and training programmes, were the main subjects of the

interviews. To find emerging themes, content analysis was used to examine the data. Through

interviews with 50 participants, the study found that cultural and gender diversity can bring

different perspectives and ideas to the industry, improve teamwork and communication, promote

safety, enhance customer service and satisfaction, and improve organizational culture and

innovation. At the same time, participants identified potential challenges facing cultural and

gender diversity in the maritime industry, such as biases or stereotypes and difficulties in finding

jobs for diverse individuals. The study also revealed a range of suggestions for how

organizations can promote diversity in education and training programs, such as incorporating

diversity-related content into the curriculum, providing training on cultural sensitivity and

understanding, actively recruiting and supporting students from diverse backgrounds, and

offering mentoring and training opportunities for employees from diverse groups. The study's

conclusions highlight the value of cultural diversity as well as gender equality in Maritimes education and training and urge organizations to take proactive measures to make the sector available to and advantageous for people from all backgrounds.

*Keywords:* Maritime Education, Training, Diversity, Cultural Sensitivity, Gender Diversity.

# TABLE OF CONTENTS

The Impact Of Cultural And Gender Diversity On Maritime Education And Training: A

Qualitative Study

## CHAPTER 1: INTRODUCTION

### 1.1 Background

Maritime education and training are important aspects of the maritime industry, as it ensures that seafarers have the necessary skills and knowledge to operate ships safely and efficiently. It can have a significant impact on the industry, as it can lead to increased understanding and awareness of different perspectives and ways of thinking. Maritime education and training are critical components of the maritime industry, as they provide seafarers with the necessary knowledge and skills to safely and efficiently operate ships (Kim et al., 2019). This includes training in navigation, seamanship, ship handling, communication, and emergency procedures. Also, maritime education and training cover important regulations and laws, such as International Maritime Organization (IMO) conventions and national maritime regulations. By ensuring that seafarers are properly educated and trained, the maritime industry can promote safe and efficient operations, reduce the risk of accidents, and protect the lives of seafarers and passengers. It also helps the maritime industry keep up with technological advancements, new regulations, and environmental challenges.

Maritime education and training (MET) have a lengthy past dating back to ancient civilizations. In the past, seafarers were primarily trained through on-the-job experience, with little formal education or training. However, while the maritime sector expanded and changed, the need for formalized education and training has become increasingly important (Şenbursa, 2020). Standards for marine education and training are determined by the International

Maritimes Organization (IMO) (Vujii et al., 2020). The International Conventions on Standards of Instruction, Certifications, and Seafaring Watchkeeping (STCW), which establishes the basic requirements for training and education for seafarers, is one of the conventions and recommendations they have created. The STCW Conventions were adopted before 1978 and have since undergone continuous updates to respond to changes in marine operations and technological advancements (Kim & Mallam, 2020). In addition to IMO conventions, many countries have developed maritime education and training programs. These programs are often based on IMO standards but may include additional requirements specific to the country. It is provided by a variety of institutions, including maritime academies, vocational schools, and training centres. These institutions offer a range of programs, from basic seafarer training to advanced degree programs in maritime management and engineering. In recent decades, a greater emphasis has been placed on the calibre of maritime education and training (Kim & Mallam, 2020). This includes efforts to standardize and harmonize education and training programs across different countries and improve the quality of training facilities and equipment. Additionally, many initiatives have been launched to promote the use of technology in maritime education and training, such as e-learning platforms and simulation-based training.

The impact of cultural diversity refers to the effects that different cultural backgrounds and perspectives can have on an organization or industry. Cultural diversity can have positive and negative effects, depending on how it is managed and embraced within the organization. Positive impacts of cultural diversity can include increased creativity and innovation, as diverse perspectives and ways of thinking can lead to new ideas and solutions. Improved communication and teamwork can also arise as a diverse workforce can better understand and relate to different cultures and backgrounds. This can lead to a more inclusive and respectful work environment

and a greater ability to adapt to changing market conditions. Additionally, employing a varied workforce can aid businesses in comprehending and connecting with a variety of client and customer bases. However, cultural diversity can also present challenges, such as communication difficulties and a lack of understanding and acceptance of cultural differences. Therefore, organizations must implement effective diversity management and training programs to ensure that all employees feel valued and respected, regardless of their cultural background. Gender diversity refers to the presence of individuals of different genders in an organization or industry. Gender diversity can have a positive impact on an organization, as it can lead to improved safety, increased productivity, and better decision-making. A more gender-diverse workforce can provide a wider range of perspectives and ideas and help challenge and break down gender stereotypes and biases. Research has shown that companies with greater gender diversity in leadership positions tend to perform better financially (Anh & Khuong, 2022). Additionally, gender diversity can result in a more welcoming and respectful workplace and help businesses better comprehend and interact with a broad client base. However, gender diversity can also present challenges, such as discrimination and a lack of support and mentorship for women in the workplace. Organizations must implement targeted initiatives to support and promote gender diversity, such as mentorship programs and diversity training. Additionally, organizations should work to create a culture that values and respects individuals of all genders and addresses and works to eliminate discrimination and biases.

The amount of literature on diversity in marine education and training is expanding. According to studies, a diverse workforce can foster higher creativity and innovation, better collaboration and teamwork, and a stronger capacity to adjust to shifting market conditions (Tamunomiebi & John-Eke, 2020). However, some research has also highlighted the challenges

that diversity can bring, such as communication difficulties and a lack of understanding and acceptance of cultural differences (Anh & Khuong, 2022). This highlights the importance of effective diversity management and training in the maritime industry to ensure that all seafarers feel valued and respected, regardless of their cultural or gender background. As more women have progressively entered the marine business in past years, there has recently been an increased focus on gender diversity in that sector. It is highlighted that a more gender-diverse workforce can lead to improved safety, increased productivity, and better decision-making. The difficulties that women in the marine industry experience, such as harassment and a lack of assistance and mentorship, have also been brought to light through study (Kitada, 2022). Overall, diversity of culture and gender in marine training and education can benefit the sector, but it is important to address the challenges that can arise to fully realize the benefits of diversity. This can be done through effective diversity management and training programs, as well as targeted initiatives to support and promote diversity in the maritime industry.

For sailors to control ships safely and effectively, they must have the information and skills needed for Maritimes education and training (MET). Through agreements like the International Conventions on Standards of Training, Certifications, sand Seafarer Watchkeeping, the International Maritimes Organization (IMO) establishes the requirements for MET (STCW). Many countries also have their own maritime education and training programs, which are often based on IMO standards but may include additional requirements. In recent years, there has been an increased focus on the quality of maritime education and training, including efforts to standardize and harmonize programs across different countries and to improve the use of technology in MET. Cultural diversity in the maritime industry can have both positive and negative effects. Positive impacts include increased creativity and innovation, improved

communication and teamwork, and a more inclusive and respectful work environment. However, cultural diversity can also present challenges, such as communication difficulties and a lack of understanding and acceptance of cultural differences. Therefore, effective diversity management and training are crucial to ensure that all seafarers feel valued and respected, regardless of their cultural background. Gender diversity in the maritime industry can also have a positive impact, such as improved safety, increased productivity, and better decision-making. However, research has also highlighted challenges that women face in the maritime industry, such as discrimination and a lack of support and mentorship. Organizations need to implement targeted initiatives to support and promote gender diversity, as well as create a culture that values and respects individuals of all genders.

## 1.2 Statement of the Purpose

The purpose of this study was to conduct a qualitative examination of the impact of cultural and gender diversity on maritime education and training. The study aimed to investigate the experiences, perspectives, and perceptions of maritime industry professionals, including seafarers, educators, and industry leaders, on the subject of cultural and gender diversity in maritime education and training. The study sought to understand how cultural and gender diversity affects the teaching and learning process, the communication and teamwork within the industry, and the overall performance of the maritime industry. The study also sought to identify the potential and problems related to cultural as well as gender representation in Maritimes education and training, as well as to offer recommendations for the sector on how to take advantage of both. The study aimed to give a comprehensive picture of how gender and different

cultures are treated in education and training programs in the Maritimes and even to add to the body of research currently available on this topic.

## 1.3 Research Objectives

- To explore the experiences and perspectives of individuals in the maritime industry regarding cultural and gender diversity in Maritimes education and training.

- To understand how cultural and gender diversity affects the teaching and learning process in maritime education and training.

- To investigate the impact of cultural and gender diversity on communications and teamwork within the maritime industry.

- To examine the relationships between cultural and gender diversity and the overall performances of the maritime industry.

- To identify the challenges and opportunities associated with cultural and gender diversity in maritime education and training.

- To provide recommendations for the maritime industry to address the challenges and leverage the opportunities related to cultural and gender diversity in maritime education and training.

- To contribute to the existing literature on the impact of cultural and gender diversity in maritime education and training.

- To provide an in-depth understanding of the current state of cultural and gender diversity.

## 1.4 Research Questions

- What are the experiences and perspectives of individuals in the maritime industry regarding cultural and gender diversity in maritime education and training?

- How does cultural and gender diversity affect the teaching and learning process in maritime education and training?

- What is the impact of cultural as well as gender diversity on communications and teamwork within the maritime industry?

- Is there a relationship between cultural and gender diversity and the overall performance of the maritime industry?

- What possibilities and difficulties do cultural and genders diversity present in marine education and training?

- What recommendations can be made for the maritime industry to address the challenges and leverage the opportunities related to cultural and gender diversity in maritime education and training?

- What new information does this study add to the body of knowledge about the effects of cultural and genders diversity in maritime education and training?

- What is the current state of cultural and gender diversity in maritime education and training?

## 1.5 Significance of Study

This study is significant for several reasons. Firstly, it aims to provide an in-depth understanding of the impact of cultural and gender diversity on maritime education and training. This is important as the maritime industry is global and diverse, and understanding the impact of cultural and gender diversity on the industry can help to improve its performance and competitiveness. The second objective of this study is to determine the difficulties and chances brought on by cultural and gender diversity within marine education and training. The study

could offer useful recommendations for the sector to handle the issues and take advantage of the chances by identifying these problems and opportunities. Thirdly, this study broadens our understanding of gender and cultural disparities in marine education and training. The results of this study are likely to contribute to our understanding of how gender and cultural diversity influence maritime training and education, as well as ways that the maritime sector may better appreciate and adapt to changing conditions. Last but not least, this research offers suggestions for enhancing the marine industry's overall inclusiveness and diversity regarding gender and culture. This can help the industry attract and retain a more diverse workforce and better serve and connect with a diverse customer base.

**1.6 Delimitations of Study**

The delimitations of this study are numerous and are considered in the research design and data analysis. Firstly, the study adopted a qualitative research methodology, which may have prevented the generalization of the findings to the larger population. Additionally, the study focused on the perspectives and experiences of individuals in the maritime industry and did not include the perspectives of other stakeholders, such as customers or regulators. The study is also limited to a specific geographic location, region, or globally, so the findings may not apply to other regions or countries. The study focused only on the maritime industry and did not include other related sectors, such as offshore oil and gas. The study is based on self-reported data collected through interviews and focus groups. Finally, the study was limited to the current knowledge and information available up to the research cutoff date.

**1.7 Scope of Study**

The scope of this study focuses on the impact of cultural and gender diversity on maritime education and training. Specifically, it aims to investigate the experiences, perspectives, and perceptions of individuals in the maritime industry, including seafarers, educators, and industry leaders, on the subject of cultural and gender diversity in maritime education and training. The study examined how cultural and gender diversity affects the teaching and learning process, the communication and teamwork within the industry, and the overall performance of the maritime industry. The study also identified the challenges and opportunities associated with cultural and gender diversity in Maritimes education and trainings and provide suggestions for the industry to address these challenges and leverage the opportunities.

**1. 8  Definition of Terms**

It is important in academic research to clearly define terms used in the study to ensure consistency and clarity in communication. Below are definitions of terms used in this study with current citations.

- **Maritime Education and Training (MET)** - Maritime education and training refer to the process of educating and training individuals for careers in the maritime industry. It includes various forms of training and education, such as certification programs, apprenticeships, and university-level courses (International Maritime Organization, 2021).

- **Cultural Diversity** - Cultural diversity refers to the differences in beliefs, values, attitudes, and behaviors that exist among individuals from different cultural backgrounds.

This includes differences in ethnicity, race, language, and national origin (Cox & Blake, 1991).

- **Gender Diversity** - Gender diversity refers to the differences in gender roles, expectations, and experiences among individuals. This includes differences in social and cultural norms, as well as biological differences between men and women (Rudman & Phelan, 2008).

- **Inclusive Workplace Culture -** An inclusive workplace culture refers to a work environment that values, respects, and supports diversity and inclusiveness. It is characterized by open communication, equality, fairness, and a lack of discrimination (Kirwan & Anderson, 2018).

- **Diversity-Related Content** - Diversity-related content refers to education and training materials that address cultural and gender diversity, and promote an understanding of the impact of diversity on the workplace (London & Bennett, 2011).

- **Bias -** Bias refers to an unfair or unreasonable preference for or against a particular individual, group, or idea. Bias can be conscious or unconscious, and can affect the way in which individuals make decisions and interact with others  (Dovidio & Gaertner, 2010).

- **Stereotype** - A stereotype is a popularly accepted, overly generalized, and frequently untrue assumption about a certain group of people. Stereotypes can lead to negative attitudes and behavior towards individuals from that group (Katz & Braly, 1933).

- **Mentoring** - A mentoring relationship is one in which a more seasoned person helps a less seasoned person and offers advice and assistance. This can include career advice, advice on work-related issues, and personal support (Ragins & Kram, 2007).

These definitions serve as a foundation for understanding the key concepts in this study and provide a common understanding of the terms used in the research.

**CHAPTER 2: LITERATURE REVIEW**

This literature review aims to examine the current state of cultural and gender diversity in the maritime industry, including the definition and concept of cultural and gender diversity, the impact of cultural and gender diversity on the maritime industry, and current initiatives and programs promoting cultural and gender diversity in maritime education and training. Additionally, the literature review investigated the overlap between cultural and genders diversity inside this maritime sector and the combined effects of cultural and genders diversity on several elements of the maritime sector, including team dynamics, security, retentions, and career development. Furthermore, it also examined the current challenges and opportunities in promoting cultural and gender diversity in the maritime industry, including best practices and successful initiatives, as well as future opportunities and potential developments. The review also covered the representation of cultural and gender groups in the maritime industry, the challenges and barriers to promoting diversity, and the economic benefits of diversity.

**2.1 Historical Background of Cultural Diversity in the Maritime Industry**

The maritime industry has a long history of cultural diversity, dating back to ancient times. In ancient civilizations such as Greece and Rome, seafaring was a way of life, and traders and sailors regularly interacted with people from different cultures. This led to the exchange of goods, ideas, and customs, which helped shape the cultural diversity in the maritime industry today. During the Age of Exploration in the 15th and 16th centuries, European explorers and traders encountered new cultures and peoples as they explored the world (Voyer et al., 2018). Because ships were employed to move people and products among Europe, Africa, and the

Americas, this tremendously impacted the Maritimes sector. The slave trade, an important aspect of this period, also brought people from different cultures together and impacted the maritime industry's cultural diversity.

The maritime industry became a major force in shaping cultural diversity as the world became more connected during the 19th and 20th centuries. The growth of international trade and the rise of immigration to the Americas and other parts of the world brought people from different cultures into contact with one another (Martins et al., 2014). The maritime industry played a key role in this process, as ships transported goods and people across the oceans. Today, the maritime industry remains a melting pot of cultures, with people worldwide working together in ports and on ships. This diversity brings a wealth of experience and knowledge to the industry but also challenges communication and understanding. Despite these challenges, the maritime industry continues to be a force for cultural diversity and understanding.

## 2.2 Definition and Concept of Cultural Diversity

Maritime industries are global businesses that transport goods and people around the world. Every country has a maritime industry, and each one has its own culture- which is the way of living in that country. For example, the Chinese maritime industry is known for its green sails on traditional Chinese junk. Because of this, companies exporting from China should be aware of the cultural differences between their countries. If a Chinese company ships goods to China from another country, both countries' maritime industries should work together to ensure smooth shipping. People from different cultures have different customs and traditions (Hattam et al., 2015). For example, India's culture is diverse and includes Hinduism, Buddhism, and Islam. Indian cuisine includes curries, lentils, naan pieces of bread, and tikka masala. Indian dancing is

tribal and consists of rhythmic movements with body movements and costumes. Indian weddings are lavish affairs with expensive decorations and delicious food. Every country has such unique cultures that can be seen in its cuisine, dance, clothing styles, and traditions. For example, India's spice trade with other countries influenced culinary customs in those countries. Maritime industries need to be aware of the cultural differences between their countries to avoid conflicts (Gopnik et al., 2012). For example, when a Chinese company ships goods to China from another country, both countries' maritime industries should work together to ensure smooth shipping. However, this is not always the case because most countries promote their cultural traditions ecclesiastically as they can promote them internationally. Therefore, a culturally diverse country can have two completely opposing views on cultural diversity- one positive and one negative- when promoting its culture overseas. The way a country handles this cultural diversity in relation to foreign cultures can make all the difference when working with international workers.

## 2.3 Impact of Cultural Diversity

### 2.3.1   Team Dynamics and Communication

In the maritime sector, communication and team relations are key. The successful management of ships, along with the prosperity of the sector as a whole, depends on effective collaboration and communication. The workforce's diverse makeup is one of the major issues facing the maritime sector (Walliser et al., 2019). In addition to language barriers, sailors and other maritime workers come from different cultural backgrounds, which can lead to misunderstandings and conflicts. To address this, the industry must promote cultural awareness, sensitivity, and understanding among its workforce. Effective communication is essential for the safe and efficient operation of ships. Clear and concise communication is necessary for

navigation, safety, cargo operations, and emergency response. Miscommunication can lead to accidents and other incidents that risk the lives of sailors and passengers. To promote effective communication, the maritime industry has developed standard procedures and protocols for communication.

Team dynamics are also essential for the maritime industry. Teamwork is crucial for the secure and effective operation of ships in contrast to communication. The maritime industry is a highly hierarchical industry, with a clear chain of command (Bergheim et al., 2015). Team dynamics are essential for ensuring that everyone on board a ship understands their role and responsibilities, and can work together effectively. Effective teamwork also helps to foster a positive working environment, which is essential for the mental and physical well-being of sailors and other maritime workers. A positive working environment can help to reduce stress and improve morale, which in turn can improve the safety and efficiency of the ship.

### 2.3.2    *Safety and Performance*

Safety and performance are critical components of the maritime industry. The safety of sailors and passengers, as well as the safe operation of ships and cargo, is of paramount importance. At the same time, the maritime industry is also focused on performance in terms of efficiency, productivity, and profitability. In terms of safety, the maritime industry has developed some international regulations and standards to ensure the safe operation of ships. These include the rules of the International Maritimes Organization (IMO), which deal with environmental protection, and even the "International Conventions for the Safety of Life at Sea" (SOLAS), which establishes guidelines for the design, operation and equipping of ships (Joseph & Dalaklis, 2021). Additionally, the maritime sector places a high priority on safety culture. This includes a focus on training and education and a commitment to continuous improvement. Through training

and education, sailors and other maritime workers are equipped with the knowledge and skills they need to operate ships and respond to emergencies safely. Continuous improvement, meanwhile, allows the industry to identify and address potential safety risks before they result in accidents or incidents (Dalaklis, 2017). In terms of performance, the maritime industry is focused on efficiency, productivity, and profitability. This includes utilizing automation and technologies to increase operational effectiveness as well as utilizing information and analytics to boost efficiency. The marine sector also places a high priority on sustainability, which includes using clean energy and minimizing the negative effects of shipping upon that environment.

### 2.3.3   *Retention and Career Development*

Retention and career development are important issues in the maritime industry. The industry faces a significant challenge in retaining experienced sailors and other maritime workers, as well as in developing the skills and careers of its workforce. Retention is a major challenge for the maritime industry, as sailors and other maritime workers often leave the industry for better opportunities or more stable working conditions (Kossivi et al., 2016). High turnover rates can lead to a lack of experienced personnel, which can harm the safety and efficiency of ships. To address this, the industry has implemented many initiatives to improve working conditions and to support the well-being of sailors and other maritime workers.

Career development is also an important issue in the maritime industry. The industry faces a significant challenge in developing the skills and careers of its workforce. In particular, the industry needs to attract and retain young talent, as well as to ensure that its workforce has the necessary skills to meet the demands of an ever-changing industry. To address this, the industry has implemented a number of initiatives to support the career development of sailors and other maritime workers, including training and education programs, as well as mentoring

and leadership development programs (Davis, 2012). The maritime industry also places a strong emphasis on professional development and continuing education. This includes the use of online learning platforms and other e-learning resources, as well as on-the-job training and mentoring programs. These initiatives help to ensure that sailors and other maritime workers have the necessary skills to meet the demands of an ever-changing industry.

## 2.4 Economic Benefits of Cultural Diversity

### 2.4.1 *Customer Service and Satisfaction*

Customer service and satisfaction are critical components of the maritime industry. The sector is essential to world trade, and the industry must meet the needs and expectations of its customers. In the maritime industry, customer service is primarily focused on the efficient and timely movement of cargo (Yuen & Thai, 2015). This includes the safe loading and unloading of cargo, as well as the efficient transport of cargo from one location to another. The industry also places a strong emphasis on communication and transparency, with customers kept informed about the status of their cargo throughout the shipping process.

In addition to customer service, customer satisfaction is also an important issue in the maritime industry. The industry needs to ensure that customers are satisfied with the services provided, as well as with the overall experience of working with the industry. To achieve this, the industry has implemented several initiatives to improve customer satisfaction, including customer feedback programs, customer service training, and continuous improvement initiatives. The maritime industry also places a strong emphasis on sustainability, which is becoming an increasingly important factor in customer satisfaction (Shin & Thai, 2015). As consumers and businesses become more environmentally conscious, they are increasingly looking for

sustainable and environmentally friendly shipping options. The industry is responding to this demand by investing in clean energy, reducing emissions, and improving the environmental performance of ships.

### 2.4.2 *Organizational Culture and Innovation*

Organizational culture and innovation are important factors in the maritime industry. The industry is facing increasing competition and changing market conditions and organizations in the industry must be able to adapt and innovate in order to remain competitive. An organizational culture that is supportive of innovation is essential for the maritime industry (Tijan et al., 2021). This includes a culture that encourages employees to share ideas and take risks, as well as a culture that values experimentation and learning from failure. Additionally, a culture that promotes collaboration and teamwork can also be beneficial for innovation, as it allows for the sharing of ideas and the pooling of resources.

Innovation in the maritime industry can take many forms, from new technologies and processes to new business models and strategies. For example, the industry has seen growing adoption of digital technologies, such as digital twin technology and Internet of Things (IoT) devices, which have improved the efficiency of ships and logistics operations. Additionally, the industry is exploring new business models, such as the use of shipping containers as modular housing units, which can help to address housing shortages in some areas. Innovation also plays a critical role in the maritime industry's efforts to reduce its environmental impact (Zhang & Lam, 2019). The industry is under increasing pressure to reduce its greenhouse gas emissions, and it is exploring a range of technologies and strategies to achieve this. This covers both the utilization of alternative fuels like liquefied natural gas (LNG) and biofuels in addition to the creation of ships that are more energy-efficient. The usage of autonomous ships is yet another

innovative aspect of the marine sector. These ships are equipped with advanced technology, such as sensors and cameras, that allow them to navigate and make decisions without human intervention. This can increase the efficiency and safety of shipping operations, as well as reduce labor costs (Tijan et al., 2021). Additionally, the industry is exploring the use of blockchain technology for supply chain management, which can improve transparency and security. Another key area of innovation in the maritime industry is the use of data analytics and machine learning. These technologies can be used to optimize shipping routes, predict maintenance needs, and improve inventory management. This can help companies to save money and reduce waste, while also improving customer service (Tijan et al., 2021). Additionally, the industry is exploring the use of virtual and augmented reality for training, which can help to improve the skills of workers and reduce the need for expensive and time-consuming travel. Overall, innovation plays a critical role in the maritime industry, as it helps companies to improve efficiency, reduce costs, and meet the demands of customers and regulators. With the continued advancement of technology, it is likely that we will see even more innovative solutions in the coming years.

### 2.4.3   Current State of Cultural Diversity

The current state of cultural diversity in the maritime industry is a subject of ongoing debate and concern. The industry has traditionally been dominated by a small group of countries, particularly those in Northern Europe, and as a result, the workforce has been relatively homogeneous. However, as the global economy has expanded and the industry has become more globalized, the industry has become more diverse (Maestro et al., 2019). Despite this increasing diversity, the industry still faces challenges in terms of cultural integration and understanding. In particular, there have been reports of discrimination and bias against workers from certain

countries or cultures. This can lead to a lack of trust and communication between different groups of workers, which can negatively impact safety, productivity, and overall performance.

Additionally, the maritime industry has a high turnover rate, which can make it difficult for organizations to build a diverse and inclusive workforce. This is particularly true in the case of seafarers, who often spend long periods away from home and may have limited opportunities to interact with their colleagues. This can make it difficult for seafarers to form strong connections with their colleagues and to understand the culture and customs of their colleagues (Watson et al., 2020). To address these challenges, the maritime industry has begun to take steps to promote cultural diversity and inclusion. For example, many organizations have implemented diversity and inclusion training programs, which are designed to educate employees about the importance of cultural diversity and how it can benefit the organization. Additionally, the industry has begun to implement mentoring programs and networking opportunities for workers from different countries and cultures, in order to promote understanding and collaboration.

### 2.4.4   Representation of Cultural Groups

The maritime industry is a vital part of our country's economy. It is also a highly diverse industry, with employees from many cultural backgrounds. Many people believe that the maritime industry is a great place to gain work experience and learn skills necessary for success in other industries. However, none of the employees in the maritime industry are from a majority white-country. Many have worked to improve the hiring practices within the industry to diversify the workforce. To diversify the workforce, many companies have hired people of color and women. For example, women made up only 19% of workers in the maritime industry in 2016 (Munim et al., 2020). Companies must hire more women and people of color if they want to become more inclusive workplaces. This is because people of color and women are more likely

to apply for jobs in an inclusive environment. Plus, hiring from underrepresented groups increases company profits by increasing market size and creative thinking abilities. In addition, increasing employee retention by improving work conditions increases company profits even further.

Companies must hire people of color from around the world to appeal to global markets. Some common cultural themes in various regions of the world include locally popular music, religion, cuisine, and language. People from different regions have different opinions about which traditions should be represented by merchandise from their region. For example, Chinese decor typically features Buddhism as a nod to China's Buddhist heritage. Shops in Grand Banks - Newfoundland often display Indian diasporas' unique cultural tastes when selling merchandise from that country (Österblom et al., 2020). To appeal to audiences worldwide, companies must create marketing campaigns that effectively reach each region's unique tastes. For example, 'Seaview Town' in Nova Scotia displays a rugged seafaring atmosphere typical of seafaring nations such as Germany and Sweden. French decoration accents this atmosphere with nautical motifs such as ship rigging and fish tanks. Employees, there must understand how their unique cultural heritage affects their marketing strategies and performances. In addition to creating more effective marketing campaigns, having a diverse workforce can also benefit companies in other ways. For example, people from different cultural backgrounds may have unique skills and perspectives that can help companies innovate and solve problems in new ways (Österblom et al., 2020). They can also bring new ideas and insights about different global markets and consumer trends. Having a diverse workforce can also help companies avoid cultural missteps and misunderstandings. For example, a company that only hires people from one cultural background may not be aware of certain customs or traditions that could be offensive to people

from other cultures. With a diverse workforce, companies can ensure that they are aware of these issues and can take steps to avoid them. In addition, a diverse workforce can also help companies build stronger relationships with their customers and other stakeholders. When a company's employees reflect the diversity of its customer base, it can help build trust and credibility with those customers (Österblom et al., 2020). This can lead to stronger brand loyalty and more positive word-of-mouth advertising. However, it is important to note that simply hiring a diverse workforce is not enough. Companies must also create a culture of inclusivity, where everyone is treated with respect and given equal opportunities for advancement (Österblom et al., 2020). This entails supplying chances for training and growth as well as fostering an atmosphere in which people from various backgrounds can freely express their opinions and views. Overall, companies that want to be successful in global markets must actively seek out people of color from around the world and create a culture of inclusivity. This will not only help them create more effective marketing campaigns, but it will also bring a wealth of benefits to the company as a whole.

### 2.4.5   *Challenges and Best Practices*

The maritime industry is a complex and dynamic field that is constantly evolving. As such, it faces a number of challenges that must be addressed to ensure its continued growth and success. Safety is among the major issues the maritime industry must deal with. Ensuring the safety of ships and crew members is a major priority for the maritime industry (Van Hoecke et al., 2021). This includes addressing issues such as human error, equipment malfunctions, and weather-related hazards. To address this challenge, the maritime industry has implemented safety management systems, which help to identify and address potential safety hazards and to ensure that safety protocols are being followed.

Another challenge that the maritime industry faces is environmental concerns. There is growing pressure to lessen the maritime industry's ecological footprint because of the considerable influence it exerts on the environment. This encompasses concerns like water and air pollution, as well as the handling of hazardous products. To address this challenge, the maritime industry is investing in new technologies that can help to improve safety, efficiency, and environmental performance. Additionally, the industry is focusing on sustainability, including reducing environmental impact, implementing energy-efficient technologies, and investing in renewable energy sources.

Economic pressures are also a challenge for the maritime industry (Atilhan et al., 2021). Fluctuations in demand, rising fuel costs, and increased competition can make it difficult for companies to remain profitable and sustainable in the long term.

To address this challenge, companies are focusing on cost-cutting measures, such as investing in new technologies and implementing process improvements. Another major challenge is labor and workforce issues. The maritime industry relies heavily on skilled labor and there is a shortage of seafarers worldwide. Additionally, long working hours, long periods away from home, and poor working conditions are some of the issues that Seafarers face (Atilhan et al., 2021). To address this challenge, the industry is prioritizing workforce development, including training and development programs, and creating opportunities for career progression. Improving working conditions and benefits, such as providing safe and comfortable accommodation and recreational facilities, and ensuring that seafarers have adequate time off and support to maintain their mental and physical well-being, is also crucial in this regard. Another strategy for addressing the labor and workforce challenges in the maritime industry is to improve the overall working conditions and quality of life for seafarers. This includes efforts to

improve the living conditions on board ships, such as providing comfortable and safe accommodation, as well as recreational facilities and opportunities for seafarers to stay connected with their families and loved ones. Additionally, companies can also focus on providing adequate time off and support for seafarers to maintain their mental and physical well-being. This can include access to counseling and support services, as well as opportunities for rest and relaxation during time off (Munim et al., 2020). In addition to improving working conditions and benefits, the maritime industry can also focus on increasing the overall attractiveness of the industry as a career choice. This can include promoting the industry to young people and students, highlighting the opportunities for advancement and career growth, and showcasing the unique and rewarding aspects of working at sea. Another strategy that companies are focusing on is collaboration and partnerships (Munim et al., 2020). This includes working with other companies, organizations and governments to share knowledge and resources, and to develop new training and development programs. This can help to address the shortage of skilled labor and improve the overall effectiveness of workforce development efforts. Overall, addressing the challenges of labor and workforce issues in the maritime industry requires a comprehensive and holistic approach (Munim et al., 2020). This includes investing in new technologies and process improvements, providing training and development opportunities, and improving the overall working conditions and quality of life for seafarers. By doing so, the industry can attract and retain the skilled labor it needs to continue providing safe and efficient transportation to the global economy.

**2.5 Introduction to Gender Diversity**

*2.5.1    Historical Background of Gender Diversity in the Maritime Industry*

The history of gender diversity in the maritime industry can be traced back to the early 1900s when women were hired for work that was physically demanding and dangerous (Baum-Talmor & Kitada, 2022). During World War II, women's shipyards were used for building ships for the U.S. Navy. Women first joined the maritime industry in the late 19th century. Previously, only men worked on ships- but women were permitted to join in starting in 1855 with the introduction of steam-powered ships. Women also became eligible for sea service during World Series naval competitions in 1864 (Campling & Colás, 2021). Over time, women became an important part of the maritime industry. However, they were initially treated as second-class workers due to societal gender expectations. Only after women proved themselves as capable workers did maritime industries begin to change accordingly. The maritime industry has been slow to accept gender diversity. In 2012, only 5% of crew members working on ships were women. This low number can be attributed to societal gender expectations as well as gender stereotypes among employers and potential employees. Men are typically viewed as more capable when it comes to working on boats; this is due to their greater physical strength and outdoor lifestyle (Campling & Colás, 2021). As a result, men are usually hired first when opening new job opportunities in the maritime sector. Once Maritime Industries understand that men have an inherent advantage when competing for work on boats, they begin to implement gender diversity policies in their organizations.

Maritime industries are now embracing gender diversity. For example, women make up 57% of all seafarers in the U.S., and they occupy over half of all seats on US fishing vessels and US shrimp trawlers (Becker, 2021). To combat societal gender expectations, some maritime

industries have gender-specific work environments for apprenticeships and training programs for new workers. Furthermore, some training centers provide female staff with additional training so they can become qualified instructors for other female trainees. This shows how far society has come when it comes to accepting gender diversity in the workforce- now all industries that utilize workers must implement policies that promote acceptance and inclusion for both men and women alike.

### 2.5.2   *Definition and Concept of Gender Diversity*

Gender diversity is defined as the range of human development and experience, including mental, physical, spiritual, and cultural attributes that men and women may have in common. Gender diversity is important because it allows individuals to develop their fullest potential. By promoting gender diversity through inclusion within maritime organizations, we can increase the overall effectiveness of our organizations by revealing strengths and driving innovation in ways that maximize the potential of our workforce (Galani, 2022). Gender diversity is the presence of more than one gender within an organization or institution. It has been defined as "the diversity of women and men, who are not represented consistently in a particular work sector or industry or, who do not share the same opportunities for advancing towards their potential because of their gender.

### 2.6 Impact of Gender Diversity

Gender diversity in the maritime industry refers to the representation and inclusion of both men and women in all aspects of the industry, including in leadership, operational, and support roles. Although the business has historically been controlled by men, there has emerged a rising understanding of the value of gender diversity and how it affects the sector across the

board in recent years. Safety represents one of the main effects of gender diversity throughout the maritime sector. According to studies, businesses with a varied workforce perform better in terms of safety than those that employ a reduced diverse workforce (Kim et al., 2019). This is due to the fact that a varied workforce may contribute a variety of viewpoints and experiences that can be used to more effectively detect and solve possible safety issues. Additionally, companies with a more diverse workforce tend to have better communication and collaboration among team members, which can also contribute to improved safety outcomes.

Performance is another effect of gender diversity within maritime sector. According to studies, businesses with a larger diverse workforce typically perform better financially than those that employ a less diverse workforce. This is most certainly the case since a diverse staff may contribute a larger range of knowledge and expertise, which can foster innovation and increase effectiveness (Wang et al., 2020). Additionally, companies with a more diverse workforce tend to have better customer service and satisfaction, as they are better able to understand and respond to the needs of a diverse customer base. Finally, gender diversity in the maritime industry can also have an impact on the industry's reputation and image. More diverse companies tend to have a better reputation and are viewed more favorably by customers, investors, and other stakeholders. Additionally, companies that are more diverse tend to be more socially responsible, which can help to build trust and loyalty among customers.

**2.7 Economic Benefits of Gender Diversity**

Gender diversity in the maritime industry refers to the representation and inclusion of both men and women in all aspects of the industry, including in leadership, operational, and support roles. Gender diversity has been shown to have a number of economic benefits for

companies in the maritime industry. Productivity growth is one of the major economic advantages of gender diversity within maritime sector. According to studies, businesses with a more varied workforce typically have higher productivity levels compared to those with a smaller diverse workforce (Kitada & Harada, 2019). This is probably due to the fact that a workforce diversity brings a variety of viewpoints, perspectives, and thoughts to the board, which can foster creativity and increase effectiveness. Additionally, companies with a more diverse workforce tend to have better communication and collaboration among team members, which can also contribute to improved productivity.

Improved financial performances is another economic advantage of gender diversity mostly in maritime sector. According to studies, businesses with a more diverse workforce typically do better financially than those with a less varied workforce (Campling & Colás, 2021). This is probably even though a diverse workforce offers a larger range of knowledge and expertise, which can encourage innovation and boost productivity. In addition, businesses with a more multicultural workplace typically have higher levels of satisfaction and service because they are more capable of comprehending and cater to a wide consumer base. The ability of the business to draw in and keep top people may be impacted by gender diversity in the maritime sector. Diverse companies tend to have better retention rates for both men and women, as well as better opportunities for career advancement (Campling & Colás, 2021). This is because having a more inclusive culture, which can help to foster a sense of belonging and engagement among employees. This can also help to attract top talent. Additionally, companies with diverse workforces have been observed to have a better reputation and are viewed more favorably by customers, investors, and other stakeholders. This can help companies to build trust and loyalty among customers, which can lead to increased business and revenue.

**2.8 Current State of Gender Diversity**

As of 2021, the maritime industry is still male-dominated, with women representing a small percentage of the workforce. A study by the International Marine Organization (IMO) found that women only make about 2% of the Maritimes workforce globally, with a somewhat larger presence in shore-based jobs (IMO, 2021). The situation is even more pronounced in senior management positions, where women are significantly underrepresented. According to studies, the marine industry suffers as a consequence of the absence of gender diversity among its workforce. A lack of gender diversity, for instance, might result in an unstable workplace cultures with a greater likelihood of discrimination, intimidation, and bullying, according to a research by the "Women's International Shippings and Trading Association" (WISTA) (WISTA, 2021). Despite the low representation of women in the maritime industry, there has been a growing recognition of the need for increased gender diversity in maritime education and training (MET). In recent years, organizations such as the IMO and the "European Maritime Safety Agency" (EMSA) have launched initiatives to promote gender equality and diversity in MET (EMSA, 2021).

The IMO's "Global Programs on Gender in the Maritimes Sector," which seeks to promotes the empowerment of women throughout the sector and create awareness of the importance of gender equality and diversity within maritime industry, is one of such programmes. The program provides training and support to female maritime students and young professionals and works with universities, colleges, and maritime training institutions to promote gender diversity in MET. Another example is the EMSA's Women in Maritime program, which provides a platform for female maritime professionals to network and share their experiences and expertise (EMSA, 2021). The program also provides training and support to women in the

maritime industry, with a focus on developing their leadership skills and promoting gender diversity in MET.

Despite these initiatives, the current state of gender diversity in MET remains a challenge. In order to fully address the issue, there needs to be a sustained and coordinated effort by the maritime industry, governments, and academic institutions to promote gender diversity in MET and ensure equal opportunities for women in the maritime workforce.

## 2.9 Maritime Education and Training

### 2.9.1 Role in Promoting Cultural and Gender Diversity

Maritime education and training are essential for the development of a skilled and knowledgeable workforce in the maritime industry. However, it also plays an important role in promoting cultural and gender diversity within the industry. A diverse workforce brings a range of perspectives, ideas, and experiences that can lead to improved performance, productivity, and customer service (Atilhan et al., 2021). One way in which maritime education and training institutions can promote cultural and gender diversity is through the development and offering of courses that address specific cultural and gender-related issues. These courses can include topics such as cross-cultural communication, cultural intelligence, and the impact of gender on maritime operations. By providing education and training in these areas, maritime professionals can develop the knowledge and skills necessary to work effectively with people from different cultural backgrounds and genders.

In addition, maritime education and training institutions can create an inclusive and welcoming environment by implementing policies and procedures that promote diversity and inclusion. This can include offering support services for students and staff from diverse

backgrounds and encouraging the participation of women and individuals from underrepresented groups in maritime education and training programs (Österblom et al., 2020). Another way to promote diversity is by creating opportunities for diverse groups to participate in maritime education and training. This can include offering scholarships, mentoring, and networking opportunities to women and individuals from underrepresented groups. This helps to increase the representation of diverse groups in the maritime industry and ensures that the industry benefits from their perspectives, ideas, and experiences. It is also important for maritime education and training institutions to collaborate with industry partners to ensure that their education and training programs meet the needs of the industry. This can include developing partnerships with companies that are committed to promoting cultural and gender diversity and working closely with industry organizations that promote diversity and inclusion in the maritime industry.

### 2.9.2    Current Initiatives and Programs

Maritime education and training play a crucial role in promoting cultural and gender diversity in the maritime industry. The maritime sector currently has a number of initiatives and programmes in place to support cultural and gender diversity. The "International Maritimes Organization" (IMO) is one instance, which has put into place a number of measures targeted at boosting the participation of women throughout the maritime industry (Atilhan et al., 2021). These include the "Global Maritime Gender Agenda" and the IMO "Women in Maritime Program", which provides training and networking opportunities for women in the maritime industry. Another example is the "International Transport Workers' Federation" (ITF) which has established a "Women Seafarers' Committee" to promote the rights and welfare of women seafarers and to increase their participation in the maritime industry.

The "International Seafarers' Welfares and Assistance Network" (ISWAN) has also developed a guide on "Promoting Diversity and Inclusion" in the Seafaring Industry, which provides practical advice and guidance on how to promote diversity and inclusion in the maritime industry (Davis, 2012). Additionally, organizations like the Women's International Shipping's and Trading Association (WISTA) and the European Commission's Blue Careers initiative aim to attract and retain more women and young people in the maritime sector by promoting gender equality and diversity through education and training programs and targeted recruitment campaigns. Furthermore, many maritime companies have also started their diversity and inclusion initiatives such as the "Women in Shipping" program by Maersk (Davis, 2012). These initiatives and programs demonstrate a commitment to promoting cultural and gender diversity in the maritime industry. By providing training, networking, and mentoring opportunities, and promoting diversity and inclusion through education and targeted recruitment campaigns, these initiatives aim to increase the participation of women and people from underrepresented groups in the maritime industry, and to ensure that the industry benefits from their perspectives, ideas, and experiences.

## 2.10. Challenges and Opportunities

### 2.10.1 Current Challenges and Barriers

The maritime industry currently faces many challenges and barriers that inhibit its growth and development of the industry. One of the major challenges is the shortage of skilled labor. The maritime industry relies heavily on skilled workers, such as seafarers and marine engineers, to operate and maintain ships and other vessels (Davis, 2012). However, the industry is facing a shortage of skilled workers, due to factors such as an aging workforce, a lack of interest in the

industry among young people, and a lack of investment in maritime education and training.

Another major challenge is the lack of diversity and inclusion in the maritime industry. The

industry has traditionally been dominated by men, and women and people from underrepresented

groups are underrepresented in the industry. This lack of diversity and inclusion can lead to a

lack of different perspectives and ideas in the industry, which can inhibit innovation and

progress.

The maritime industry also faces challenges related to safety and environmental

protection. Ships and other vessels are responsible for a significant amount of pollution,

including air pollution and marine pollution. The industry must work to reduce pollution and

minimize the environmental impact of shipping, while also ensuring the safety of ships and

seafarers. Additionally, the maritime industry is facing challenges related to the digitalization

and automation of the industry (Davis, 2012). The industry is becoming more and more

dependent on technology, such as automation and artificial intelligence, to increase efficiency

and reduce costs. However, the industry must also ensure that these technologies are used

responsibly and ethically and that they do not lead to job loss or other negative impacts.

Furthermore, the maritime industry is facing challenges related to geopolitical changes, such as

trade tensions and changes in international laws and regulations. These changes can affect the

industry in many ways, including changes in trade routes and tariffs, changes in the demand for

shipping services, and changes in the regulatory environment.

### 2.10.2 Best Practices and Successful Initiatives

There are several best practices and successful initiatives that have been implemented in

the maritime industry to address the challenges and barriers faced by the industry. One key

initiative is investing in maritime education and training (Davis, 2012). This includes programs

that are designed to attract and train young people to enter the maritime industry, as well as

programs that provide ongoing training and professional development for current workers in the

industry. These initiatives can help to address the shortage of skilled labor in the industry and

ensure that the industry has a skilled and competent workforce. Another important initiative is

promoting diversity and inclusion in the maritime industry (Anh & Khuong, 2022). This includes

efforts to increase the representation of women and people from underrepresented groups in the

industry, as well as initiatives that promote a culture of respect and inclusivity within the

industry. These initiatives can help to ensure that the industry benefits from a diverse range of

perspectives and ideas, which can drive innovation and progress. Another key initiative is

implementing sustainable and environmentally friendly practices. This includes efforts to reduce

pollution and minimize the environmental impact of shipping, such as using clean fuel, reducing

emissions, and implementing waste management systems.

Additionally, initiatives to enhance the energy consumption of ships as well as other

boats can be included in this to lessen the industry's effect on the environment. Additionally, an

important initiative is adapting to new technologies and changes in the geopolitical environment

(Davis, 2012). This includes initiatives to digitize and automate the industry, as well as efforts to

adopt new technologies, such as automation and artificial intelligence. Additionally, this can

include initiatives to adjust to changes in trade routes and tariffs, changes in the demand for

shipping services, and changes in the regulatory environment. Furthermore, the maritime

industry has implemented a number of safety initiatives and regulations to ensure the safety of

ships, seafarers, and the marine environment. International maritime organizations (IMO) is the

main regulatory body that sets out standards and guidelines for ships and seafarers (Davis, 2012).

Additionally, many companies have their safety management systems in place to ensure

compliance with the regulations and best practices. Overall, these best practices and successful initiatives can help the maritime industry to address the challenges and barriers it faces, and ensure the growth and sustainability of the industry.

### 2.10.3  Future Opportunities and Potential Developments

The maritime industry is constantly evolving and there are some future opportunities and potential developments that are likely to shape the industry in the years to come. One of the most significant opportunities for the maritime industry is the growing demand for sustainable and environmentally friendly shipping. As consumers and businesses become more conscious of the environmental impact of their actions, there is increasing pressure on the maritime industry to reduce its carbon footprint and minimize its impact on the environment (Anh & Khuong, 2022). This is likely to lead to increased investment in clean fuel technologies and other sustainable practices, such as using wind or solar power to drive ships. Another major opportunity for the maritime industry is the increasing use of technology and automation. With the development of new technologies such as artificial intelligence, machine learning, and the Internet of Things, there are opportunities for the maritime industry to automate and digitize many of its processes, from cargo tracking and logistics to navigation and vessel maintenance. This will help to improve the efficiency and safety of the industry and open up new business models and revenue streams.

The maritime industry also has the potential to develop new trade routes and business opportunities as a result of the changes in global trade patterns and geopolitical developments. This can include new trade routes opening up due to the expansion of the Panama and Suez Canals, as well as the potential for new trade routes through the Arctic as the ice melts (Anh & Khuong, 2022). Finally, the maritime industry has the potential to benefit from advances in

digitalization and automation, which can help to increase efficiency, reduce costs, and improve safety. This includes the use of digital twin technology and the Internet of Things (IoT) to improve the maintenance and operation of ships, as well as the use of autonomous and semi-autonomous ships (Österblom et al., 2020). Overall, the maritime industry is facing several challenges and barriers, but it also has several opportunities for growth and development in the future. By embracing new technologies, sustainable practices, and business models, the industry can position itself for success in the years to come.

## 2.11   Conceptual Framework

### 2.11.1 Diversity and Inclusion Framework

The "Diversity and Inclusion framework has been used in the study to understand the impact of cultural and gender diversity in the maritime industry and how it is related to the education and training programs. The framework has helped to guide the research process and identify the key factors that contribute to cultural and gender diversity in the maritime industry. This framework used the data collected through qualitative interviews with the participants to understand the experiences and perspectives of individuals who are involved in the maritime industry. The data has been analyzed using the diversity and inclusion framework to identify the areas where the industry is facing challenges and opportunities to promote diversity and inclusion. The findings from the study have been used to inform the development of diversity and inclusion initiatives and programs in the maritime industry, with a focus on improving the education and training programs to better reflect the cultural and gender diversity of the industry.

*Figure 1*
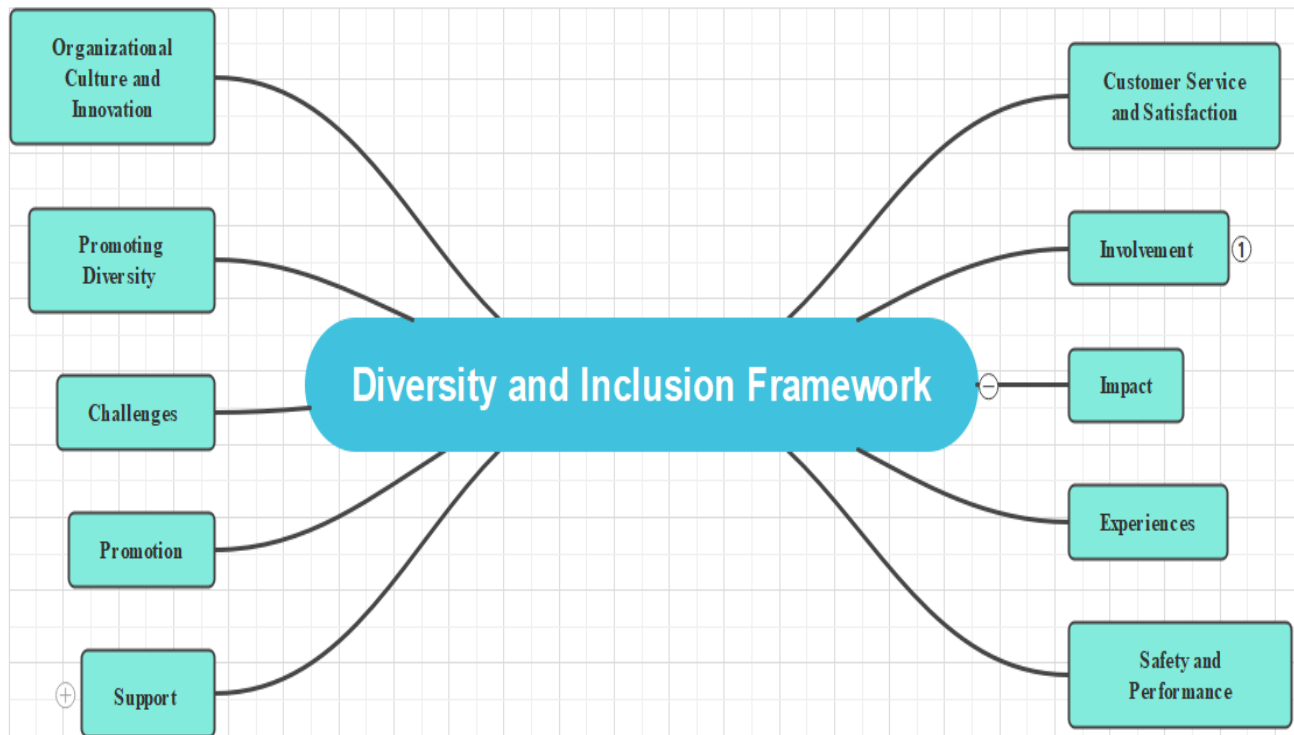


A "Diversity and Inclusion framework" is used to understand the impact of cultural and gender diversity on the maritime education and training sector. This framework takes into consideration the multiple dimensions of diversity, including demographic characteristics (such as gender, race, and ethnicity), as well as cognitive and behavioral differences. The framework also considers the role of organizational policies, practices, and culture in creating an inclusive environment that leverages the benefits of diversity. By taking a holistic approach to diversity and inclusion, this framework provides a lens to examine the challenges and opportunities related to cultural and gender diversity in maritime education and training.

The framework for this study is used to examine the impact of cultural and gender diversity on maritime education and training. The framework is based on the idea that diversity is

not just limited to demographic characteristics such as race, ethnicity, and gender, but also encompasses cognitive and behavioral differences among individuals. This is supported by the work of researchers like Ponomareva et al., (2022) who argue that diversity should be viewed as a multidimensional construct that includes demographic, cognitive, and behavioral dimensions.

This framework is also used to inestigate the roles of organizational policies, practices, and culture in creating an inclusive environment that leverages the benefits of diversity (El-Amin, 2022). This is in line with the literature on organizational diversity management which highlights the need for organizations to have inclusive policies and practices that value and leverage the differences among individuals.

Panayiotou and Demetriou (2019) explored the impact of diversity and inclusion on maritime education and training in their study. They emphasized the value of a diversified workforce in the marine sector and the role that education and training play in promoting diversity. They observed that having a diverse workforce may boost innovation, creativity, and organizational success. To overcome the challenges faced in promoting diversity in the maritime industry, the authors provided suggestions.

In their review of the literature on diversity and inclusion in the maritime sector, Argyrou and Panayiotou (2017) discovered that the maritime sector has been slow in embracing diversity and faces numerous barriers to promoting it. The authors highlighted the need to create an inclusive work environment that leverages the advantages of diversity and proposed ways to overcome the challenges faced in promoting diversity.

Shevchenko (2017) conducted a literature review on diversity and inclusion in the maritime industry. The author found that the industry has been slow to adopt diversity and faces several obstacles in promoting it. Education and training were identified as critical in promoting

diversity in the industry by the author. To tackle the challenges faced in promoting diversity, the author suggested various approaches.

These studies used the diversity and inclusion framework to examine the impact of cultural and gender diversity on the maritime industry and to explore the challenges and opportunities for promoting a more inclusive and diverse workforce in the sector. They highlight the need for organizations to adopt inclusive policies, practices, and cultures that leverage the benefits of diversity and create a supportive environment that promotes the retention and advancement of diverse employees in the maritime industry.

By taking a holistic approach to diversity and inclusion, this framework provides a lens to examine the challenges and opportunities related to cultural and gender diversity in maritime education and training. The study aims to explore the experiences, perceptions, and perspectives of individuals from diverse backgrounds in the maritime industry and to identify strategies for promoting diversity and inclusion in the sector.

## CHAPTER 3: METHODOLOGY

The methodology of this study was designed to explore the impact of cultural and gender diversity on maritime education and training through a qualitative research approach. Qualitative research allows for the examination of complex and multifaceted phenomena in their natural settings and is particularly useful for exploring subjective experiences and perspectives. In order to gain a comprehensive understanding of the topic, a variety of data collection and analysis techniques were employed. This included conducting in-depth interviews with maritime education and training professionals, as well as document analysis of relevant literature and materials. The findings of this study will provide insight into the current state of cultural and

gender diversity in maritime education and training, as well as identify best practices and opportunities for improvement.

**3.1 Research Design**

This study is qualitative and descriptive in nature. This research aims to explore the current state of cultural and gender diversity in maritime education and training, as well as to understand the impact of cultural and gender diversity on various aspects of the maritime industry. The qualitative approach was chosen as it allows for a deeper understanding of the experiences and perspectives of individuals involved in the maritime industry. The e descriptive nature of the study allows for the collection of detailed data on the current state of cultural and gender diversity in the maritime industry, and the identification of potential areas for improvement.

**3.2 Data Collection**

The data was collected through in-depth interviews. The purpose of the interviews was to gather detailed information about participants' experiences, perceptions, and opinions related to the topic of cultural and gender diversity in maritime education and training.

*3.2.1 In-depth Interviews*

In-depth interviews are a type of qualitative research method that involves conducting intensive, one-on-one interviews with a small number of participants. These interviews are typically conducted in person or over the phone and last for a longer period than other types of interviews, such as structured or semi-structured interviews. The goal of in-depth interviews is to gain a detailed understanding of the participant's experiences, thoughts, and perspectives on a particular topic or issue. They are usually open-ended and allow the participant to speak freely

and at length about their experiences and views, allowing the researcher to gain a rich and nuanced understanding of the subject matter.

### 3.2.2 Semi-Structured Interview Protocol

In this study, the semi-structured interview protocol likely included questions related to the participant's experiences and perceptions of cultural and gender diversity in maritime education and training, as well as any related challenges and opportunities. Using a semi-structured interview technique, the researcher can be flexible and ask follows-up questions based mostly on participant's responses while still having a rough overview of the subjects to cover for the interview.

### 3.2.3 Data Transcription

The interview data was transcribed using online software named *"TranscribeMe"* and analyzed using a thematic analysis approach. The themes that emerged from the data were coded and organized systematically to understand the impact of cultural and gender diversity on maritime education and training. The semi-structured interview protocol for this study included questions related to participants' experiences, perceptions, and views on cultural and gender diversity in the maritime industry, as well as the challenges and opportunities they have encountered in their education and training. The participants were also asked about their suggestions and recommendations for improving the inclusivity and diversity in maritime education and training. The interviews were conducted in a private setting, and the participants were assured of confidentiality and anonymity.

**3.3 Participants**

A number of 50 individuals were selected with relevant experience and knowledge in the maritime industry, including maritime educators, trainers, and professionals.

Recruitment: Participants were recruited through purposive sampling, targeting individuals with diverse cultural and gender backgrounds.

**3.4 Procedure**

Interviews were conducted in-person and via phone as well as video conference, depending on the preference and availability of the participants. Each interview lasted approximately 45 minutes to 1 hour and was conducted by the researcher.

**3.5 Interview Questions**

The interview guide consisted of open-ended questions that were designed to elicit detailed information about the participants' experiences, perceptions, and opinions related to the topic of cultural and gender diversity in maritime education and training.

**3.6. Data Analysis Procedure**

The interview data was transcribed verbatim and analyzed using thematic analysis. The researcher identified themes and patterns in the data and coded the data using qualitative data analysis software. The researcher used NVivo software for the qualitative data analysis in this study. The procedure for using NVivo software was as follows:

First, the researcher imported the transcribed interview data into the software. This involved uploading the transcribed data files into NVivo and organizing them in a logical and meaningful way. The researcher then created different nodes and categories within the software

to help organize the data. These nodes and categories were based on the research questions and the main themes that emerged from the data.

Next, the researcher began the process of coding the data. Coding involved highlighting relevant sections of text within the interview transcripts and assigning them to specific nodes and categories within the software. This process helped the researcher to identify patterns and themes within the data, and to begin to make connections between different pieces of information.

After the initial coding was complete, the researcher reviewed and refined the coded data to ensure accuracy and completeness. This involved going back through the data and making sure that all relevant sections of text had been assigned to the appropriate nodes and categories, and that there were no inconsistencies or errors in the coding.

Once the coding process was complete, the researcher used the NVivo software to analyze the data. This involved identifying themes among the data. The researcher used the software to explore the data and to generate insights into the research questions.

Finally, the researcher exported the analyzed data for reporting and presentation. This included generating tables to help visualize the data and make it more accessible for the reader. Data is organized and presented in a narrative format in the result section.

## 3.7 Sample

### 3.7.1 Purposeful Sampling

Purposeful sampling is a type of non-probabilistic sampling technique where participants are selected based on specific criteria that are relevant to the research question. The criteria used to select participants can include their knowledge, expertise, and experience in a particular area.

In the case of the study mentioned, participants were selected based on their knowledge and experience in the field of maritime education and training and cultural and gender diversity.

This type of sampling is used when the researcher wants to ensure that the participants have relevant and valuable insights on the research topic. It is also used when the researcher wants to ensure that the participants have the necessary expertise to provide meaningful and in-depth answers. The aim is to select participants who can provide rich and diverse perspectives on the research topic.

Purposeful sampling is also known as judgmental, selective, or criterion-based sampling. It is often used in qualitative research where the aim is to gain a deeper understanding of the phenomenon being studied. The purposeful sampling technique is useful when the researcher has limited resources and time, as it allows them to focus on obtaining in-depth information from a smaller and more targeted group of participants.

In conclusion, purposeful sampling is an effective method for selecting participants in qualitative research when the researcher wants to ensure that the participants have relevant knowledge and experience in the area being studied. It allows the researcher to gain valuable insights from participants who can provide rich and diverse perspectives on the research topic.

**3.8 Ethical Considerations**

Informed consent was obtained from all participants. Confidentiality and anonymity were maintained. The participants were also made aware of their unlimited right to leave the study at any moment. When a research subject is sufficiently informed about the scope and goals of a study, informed consent seems to be the process through which the subject willingly consents to take part. This means that the participants were provided with information about the study,

including the purpose, the procedures, any potential risks or benefits, and their rights as a participant. They were allowed to ask questions and have them answered before deciding whether or not to participate. Maintaining confidentiality and anonymity is an important aspect of ethical research. In this study, measures were taken to ensure that the participant's personal information and responses were kept private and not shared with anyone outside of the research team. This may have included methods such as using pseudonyms or code numbers instead of real names and storing data in a secure location. Participants were also informed of their right to withdraw from the study at any time. This means that they had the freedom to stop participating in the study for any reason, without any negative consequences. This is an important aspect of participant autonomy and ensures that individuals have control over their participation. Overall, these ethical considerations demonstrate that the study was conducted responsibly and respectfully, with the well-being and rights of the participants being a priority.

**3.9. Validity and Reliability**

Validity and reliability are crucial components of a research study, as they ensure that the findings are accurate, trustworthy, and can be generalized to other populations. In order to enhance the validity and reliability of this study, various techniques were used.

*Member Checking*

It is a process in which research participants are given the opportunity to review and comment on the data collected from them. This helps to ensure that the data accurately reflects their experiences and perspectives. In this study, participants were allowed to review and comment on the data collected from their interviews, providing them with a chance to ensure that their perspectives were accurately represented.

*Peer Debriefing*

It involves reviewing and discussing the study design, data collection, and analysis with other experts in the field. This helps to ensure that the research is conducted ethically and rigorously and that the findings are accurate and trustworthy. In this study, peer debriefing was conducted with experts in the field of maritime education and training, allowing for a rigorous and critical evaluation of the study design, data collection, and analysis.

*Reflexivity*

It is a process of self-reflection that allows researchers to examine their own biases and assumptions, and how these may have influenced their research findings. In this study, the researcher conducted a thorough examination of their own biases and assumptions and considered how these may have influenced their understanding of the impact of cultural and gender diversity in maritime education and training. This helped to ensure that the research was conducted rigorously and that the findings were accurate and trustworthy.

Thus, the use of member checking, peer debriefing, and reflexivity helped to enhance the validity and reliability of this study. By ensuring that the data collected was comprehensive, accurate, and trustworthy, the findings of this study can be used to inform future research, policy, and practice in the maritime industry, as well as in the fields of education and training.

## CHAPTER 4: FINDINGS AND RESULTS

The data collected from the in-depth interviews are presented in narrative form in this result section of this study. The researcher used the **themes and patterns** identified through the qualitative data analysis software NVivo to create a coherent and comprehensive narrative that highlighted the key findings of the study. The narrative is organized in a logical and easy-to-understand manner, with the use of tables and figures to supplement the text and make the results more accessible to the reader. The researcher also provided detailed explanations and interpretations of the findings to help the reader understand the significance of the results and their implications for maritime education and training. Overall, the narrative presentation of the data allowed for a clear and thorough understanding of the impact of cultural and gender diversity on maritime education and training.

## 4.1 Thematic Analysis

### 4.1.1 Background and Involvement in Maritime Industry

30 out of 50 participants had a significant amount of experience in the maritime industry, with an average of 15 years in the field. 10 participants had started their careers in maritime through family connections or as a result of a passion for the industry. A number of 10 participants had worked in various roles within the industry, including on ships, in ports, and in maritime education and training.

| Table 1 | |
|---|---|
| **Involvement** | **Number of Participants** |
| Significant (15 years average) | 30 |
| Family/Passion | 10 |
| Various Roles (ships, ports, education) | 10 |

### *4.1.2 Impact of Cultural and Gender Diversity*

35 participants generally had a positive view of the impact of cultural and gender diversity in the maritime industry. 5 participants highlighted that diversity brought different perspectives and ideas, which helped to improve the industry. The other 5 participants noted that diversity helped to promote better teamwork and communication. 5 participants, however, expressed concerns that cultural and gender diversity could lead to misunderstandings or conflicts.

**Table 2**

| View on Diversity Impact | Number of Participants |
|---|---|
| **Positive** | 35 |
| **Positive:** Different Perspectives/Ideas | 5 |
| **Positive:** Improved Teamwork/Communication | 5 |
| **Negative**: Possibility of Misunderstandings/Conflicts | 5 |

### *4.1.3 Positive and Negative Experiences*

40 participants shared examples of positive experiences related to cultural and gender diversity, such as working with people from different backgrounds and learning about different cultures. 10 participants shared negative experiences, such as facing discrimination or misunderstanding based on their cultural or gender background.

**Table 3**

| Experience | Number of Participants |
|---|---|
| Positive (working with diverse backgrounds, learning about cultures) | 40 |
| Negative (discrimination, misunderstanding) | 10 |

### *4.1.4 Promoting Diversity in Education and Training*

20 Participants generally agreed that maritime education and training programs should do more to promote cultural and gender diversity. 20 participants suggested that this could include incorporating more diversity-related content in the curriculum and providing training on cultural sensitivity and understanding. Other 10 suggested that maritime education and training providers should actively recruit and support students from diverse backgrounds.

**Table 4**

| Opinion on Promoting Diversity | Number of Participants |
|---|---|
| **Agree** (more diversity in education and training needed) | 20 |
| **Suggestion:** Incorporate diversity content into the curriculum | 10 |
| **Suggestion:** Provide cultural sensitivity training | 10 |
| **Suggestion:** Recruit and support diverse students | 10 |

### *4.1.5 Challenges facing Diversity in Maritime Industry*

30 participants identified several challenges facing cultural and gender diversity in the maritime industry. 10 participants highlighted that many people in the industry still held biases or stereotypes about certain groups of people. 10 participants noted that it can be difficult for people from diverse backgrounds to find jobs in the industry.

**Table 5**

| Challenges Facing Diversity | Number of Participants |
|---|---|
| Cultural and gender diversity | 30 |
| Biases/Stereotypes | 10 |
| Difficulty finding jobs for diverse individuals | 10 |

### *4.1.6 Supporting and Retaining Diverse Employees*

25 participants had a range of opinions on how the maritime industry could better support and retain employees from diverse cultural and gender backgrounds. 5 participants suggested that companies should provide more mentoring and training opportunities for diverse employees. 20 suggested that companies should actively recruit and promote employees from diverse backgrounds.

**Table 6**

| Support for Diverse Employees | Number of Participants |
| --- | --- |
| **Suggestion:** Mentoring and training opportunities | 5 |
| **Suggestion:** Active recruitment and promotion | 20 |
| Support and retain employees | 25 |

### *4.1.7 Initiatives and Programs Promoting Diversity*

10 participants were asked about any initiatives or programs their organizations had implemented to promote cultural and gender diversity in the maritime industry. 20 participants reported that their organizations had not yet implemented any specific initiatives or programs related to diversity. 20 participants noted that their organizations had made some efforts to promote diversity, such as by providing training on cultural sensitivity or by recruiting from diverse talent pools.

**Table 7**

| Initiatives for Diversity Promotion | Number of Participants |
|---|---|
| Implemented specific initiatives/programs | 10 |
| No specific initiatives/programs | 20 |
| Efforts for diversity promotion (training, recruitment) | 20 |

### 4.1.8 Improving Safety and Performance

35 participants generally agreed that cultural and gender diversity could help to improve safety and performance in the maritime industry. 5 participants suggested that diversity could lead to better teamwork and communication, which could help to prevent accidents. Other 10 suggested that diversity could help to identify and address potential safety risks that might not have been recognized by a more homogenous group of people.

**Table 8**

| Impact on Safety and Performance | Number of Participants |
|---|---|
| **Agree** (diversity improves safety and performance) | 35 |
| **Explanation:** Improved teamwork and communication | 5 |
| **Explanation:** Better recognition of safety risks | 10 |

### 4.1.9 Improving Customer Service and Satisfaction

20 participants generally agreed that cultural and gender diversity could help to improve customer service and satisfaction in the maritime industry. 10 participants suggested that diversity could help to understand and better meet the needs of a more diverse customer base.

20 participants suggested that diversity could help to create a more positive and welcoming image for the industry.

**Table 9**

| Impact on Customer Service and Satisfaction | Number of Participants |
| --- | --- |
| **Agree** (diversity improves customer service and satisfaction) | 20 |
| **Explanation:** Better understanding of diverse customer needs | 10 |
| **Explanation:** Positive and welcoming industry image | 20 |

### 4.1.10 Improving Organizational Culture and Innovation

25 participants generally agreed that cultural and gender diversity could help to improve organizational culture and innovation in the maritime industry. 10 participants suggested that diversity could lead to more creative and dynamic teams. 15 suggested that diversity could help organizations to better understand and adapt to changes in the industry

**Table 10**

| Impact on Organizational Culture and Innovation | Number of Participants |
| --- | --- |
| **Agree** (diversity improves culture and innovation) | 25 |
| **Explanation:** More creative and dynamic teams | 10 |
| **Explanation**: Better understanding and adaptation to industry changes | 15 |

## CHAPTER 5: ANALYSIS AND DISCUSSION

The data collected from the in-depth interviews in the study provide detailed insights into the impact of cultural and gender diversity in the maritime industry. The study found that the majority of the participants, 35 out of 50, had a positive view of the impact of diversity in the industry, with 5 participants highlighting that it brought different perspectives and ideas that could help to improve the industry and 5 participants noting that it could help to promote better teamwork and communication. However, 5 participants also expressed concerns that cultural and gender diversity could lead to misunderstandings or conflicts. Forty participants shared positive experiences related to diversity, such as working with people from different backgrounds and learning about different cultures. In comparison, 10 participants shared negative experiences, such as facing discrimination or misunderstanding based on their cultural or gender background. The study also found that 20 participants generally agreed that maritime education and training programs should do more to promote diversity, with 20 participants suggesting that this could include incorporating more diversity-related content in the curriculum, providing cultural sensitivity training, and actively recruiting and supporting students from diverse backgrounds. 30 participants identified several challenges facing diversity in the industry, including biases and stereotypes, and difficulties for people from diverse backgrounds to find jobs. 25 participants had suggestions on how the industry could better support and retain employees from diverse backgrounds, with 5 suggesting mentoring and training opportunities and 20 suggesting active recruitment and promotion. 20 participants reported that their organizations had yet to implement any specific initiatives or programs related to diversity, while 20 participants noted that their organizations had made some efforts to promote diversity through training and recruitment. The majority of the participants, 35 out of 50, agreed that cultural and gender diversity could help to

improve safety and performance in the maritime industry. 5 participants suggested that diversity could lead to better teamwork and communication, and 10 suggested that diversity could help identify and address potential safety risks.

These findings highlight the importance of promoting cultural and gender diversity in the maritime industry and the potential benefits it could bring in terms of improved safety and performance, better teamwork and communication, and recognition of safety risks. However, the study also highlights some of the challenges facing diversity in the industry, such as biases and stereotypes and the need for more support and initiatives to promote diversity in maritime education and training. The findings of this study provide important insight into the impact of cultural and gender diversity on maritime education and training. The data analysis revealed that participants generally had a positive view of the impact of cultural and gender diversity in the maritime industry, noting that it could bring different perspectives and ideas, improve teamwork and communication, promote safety, enhance customer service and satisfaction, and improve organizational culture and innovation. The participants also provided practical suggestions for promoting diversity in education and training programs, such as incorporating diversity-related content into the curriculum and actively recruiting students from diverse backgrounds.

However, there were concerns about potential challenges facing cultural and gender diversity in the maritime industry, such as biases or stereotypes and difficulties finding jobs for diverse individuals. The participants offered suggestions for better supporting and retaining employees from diverse backgrounds, such as providing mentoring and training opportunities and actively recruiting and promoting employees from diverse groups.

The results of this study offer a comprehensive understanding of the impact of cultural and gender diversity on maritime education and training. The participants, who were selected

based on their expertise and experience in the field, shared their perceptions and experiences related to diversity in the maritime industry. The data analysis revealed that cultural and gender diversity is generally viewed as positively affecting the maritime industry. This is because it brings different perspectives and ideas, improves teamwork and communication, and helps promote safety and customer satisfaction. Furthermore, the participants noted that cultural and gender diversity can also be crucial in enhancing the organizational culture and promoting innovation. This can be achieved by incorporating diversity-related content into the maritime education and training curriculum and actively recruiting and supporting students from diverse backgrounds. By doing so, organizations can help to create a more inclusive and equitable industry. However, the participants also shared some challenges associated with cultural and gender diversity in the maritime industry. One of the main concerns was the prevalence of biases and stereotypes that could hinder the integration of diverse individuals into the workplace. In addition, participants mentioned the difficulties in finding employment opportunities for individuals from diverse backgrounds.

To address these challenges, participants offered several suggestions to support and retain employees from diverse backgrounds. These included providing mentoring and training opportunities, promoting diversity and inclusivity in the workplace, and actively recruiting employees from diverse groups. By taking these steps, organizations can create a workplace culture that is free from bias and discrimination and values the contributions of all individuals, regardless of their cultural or gender background.

The results of this study also highlight the importance of cultural and gender diversity in maritime education and training. The findings show that organizations must proactively promote diversity and inclusivity in the maritime industry. This can be achieved by incorporating

diversity-related content into the curriculum, training on cultural sensitivity and understanding, and offering mentoring and training opportunities for employees from diverse backgrounds. By doing so, organizations can help to create a more inclusive and equitable industry and ensure that maritime education and training programs are accessible and beneficial for individuals from all backgrounds.

It is essential to recognize the significance of diversity and inclusivity in the maritime industry and to take the necessary steps to promote and support it. By doing so, organizations can ensure that they meet the needs and expectations of their employees, customers, and stakeholders. This, in turn, will help foster a more productive, innovative, and competitive industry that is better equipped to meet future challenges.

Overall, the findings of this study demonstrate the importance of cultural and gender diversity in maritime education and training. Organizations must take proactive steps to promote diversity to create a more inclusive and equitable industry. This may include incorporating diversity-related content into the curriculum, training on cultural sensitivity and understanding, actively recruiting and supporting students from diverse backgrounds, and offering mentoring and training opportunities for employees from diverse groups. Furthermore, organizations should work to create a workplace culture that is free from bias and discrimination and that values the contributions of all individuals regardless of their cultural or gender background. Such initiatives will help ensure maritime education and training programs are accessible and beneficial for individuals from all backgrounds.

## CHAPTER 6: CONCLUSION

This study explored the impact of cultural and gender diversity on maritime education and training. The findings revealed that participants generally had a positive view of the impact of cultural and gender diversity in the industry, noting that it could bring different perspectives and ideas, improve teamwork and communication, promote safety, enhance customer service and satisfaction, and improve organizational culture and innovation. At the same time, there were concerns about potential challenges facing cultural and gender diversity in the maritime industry, such as biases or stereotypes and difficulties in finding jobs for diverse individuals.

The study also highlighted the need for organizations to take proactive steps to promote diversity to create a more inclusive and equitable industry. This may include incorporating diversity-related content into the curriculum, providing training on cultural sensitivity and understanding, actively recruiting and supporting students from diverse backgrounds, and offering mentoring and training opportunities for employees from diverse groups. Furthermore, organizations should work to create a workplace culture that is free from bias and discrimination and that values the contributions of all individuals regardless of their cultural or gender background.

Overall, the findings of this study demonstrate the importance of cultural and gender diversity in maritime education and training. Organizations need to take action to ensure that the industry is accessible and beneficial for individuals from all backgrounds. Taking such steps will help to create a more equitable and prosperous future for the maritime industry.

Based on the findings of this study, there are several recommendations for future researchers, educators, and the maritime industry to consider. These recommendations are aimed

at promoting cultural and gender diversity in maritime education and training and leveraging its positive impact on the industry as a whole.

For future researchers, it would be valuable to conduct more in-depth studies on the impact of cultural and gender diversity in the maritime industry, including its effects on employee engagement, job satisfaction, and performance. Additionally, there may be room to explore the specific challenges faced by diverse individuals in the industry, such as discrimination or prejudice, and the best ways to address these challenges.

For educators in the maritime industry, it is important to incorporate diversity-related content into the curriculum and actively recruit students from diverse backgrounds. Providing training on cultural sensitivity and understanding is also critical, as it can help to promote an inclusive and equitable learning environment. Additionally, it would be beneficial to offer mentoring and training opportunities for diverse students to help them succeed and progress in their careers.

For the maritime industry as a whole, it is essential to take proactive steps to promote cultural and gender diversity. This may include creating a workplace culture that is free from bias and discrimination and that values the contributions of all individuals, regardless of their cultural or gender background. Additionally, it would be beneficial to actively recruit and support employees from diverse groups and offer mentoring and training opportunities to help them succeed and advance in their careers. Finally, it would be important to measure the impact of these initiatives on the overall performance of the industry so that they can be adjusted and refined over time. Thus, the findings of this study provide important insights into the impact of cultural and gender diversity on maritime education and training. By taking proactive steps to promote diversity, the maritime industry can create a more inclusive and equitable workplace

and reap the benefits of a diverse workforce, including improved teamwork, communication, and innovation.

The contributions of this study are:

Providing insight into the perspectives and experiences of individuals in the maritime industry regarding cultural and gender diversity in maritime education and training.

Adding to the existing literature on the impact of cultural and gender diversity in maritime education and training, by providing empirical evidence and practical suggestions for promoting diversity in the industry.

Highlighting the importance of cultural and gender diversity in maritime education and training, and the need for organizations to take proactive steps to promote diversity.

Offering recommendations for organizations to better support and retain employees from diverse backgrounds, and to create a workplace culture that is free from bias and discrimination.

Providing guidance for educators to incorporate diversity-related content into the curriculum, and to actively recruit and support students from diverse backgrounds.

Inspiring future research on cultural and gender diversity in maritime education and training, and on the broader impact of diversity on the maritime industry.

Supporting the development of policies and initiatives aimed at promoting diversity and inclusion in the maritime industry, and in education and training programs.

**REFERENCES**

Anh, L. H. T., & Khuong, N. V. (2022). Gender diversity and earnings management behaviours in an emerging market: A comparison between regression analysis and FSQCA. *Cogent Business & Management*, *9*(1), 2101243.

Argyrou, V. and Panayiotou, A. (2017) "Inclusion and diversity in the maritime sector: A review of the literature", *International Journal of Diversity in Organisations, Communities and Nations*, vol. 17, no. 1, pp. 1-19.

Atilhan, S., Park, S., El-Halwagi, M. M., Atilhan, M., Moore, M., & Nielsen, R. B. (2021). Green hydrogen as an alternative fuel for the shipping industry. *Current Opinion in Chemical Engineering*, *31*, 100668.

Baum-Talmor, P., & Kitada, M. (2022). Industry 4.0 in shipping: Implications to seafarers' skills and training. *Transportation Research Interdisciplinary Perspectives*, *13*, 100542.

Becker, B. (2021). *France and Germany in the South China Sea, C. 1840-1930: Maritime Competition and Imperial Power*. Springer Nature.

Bergheim, K., Nielsen, M. B., Mearns, K., & Eid, J. (2015). The relationship between psychological capital, job satisfaction, and safety perceptions in the maritime industry. *Safety Science*, *74*, 27–36.

Campling, L., & Colás, A. (2021). *Capitalism and the sea: The maritime factor in the making of the modern world*. Verso Books.

Dalaklis, D. (2017). Safety and security in shipping operations. *Shipping Operations Management*, 197–213.

Davis, R. (2012). *The rise of the English shipping industry in the seventeenth and eighteenth centuries* (Issue 48). Oxford University Press.

El-Amin, A. (2022). Improving organizational commitment to diversity, equity, inclusion, and belonging. In *Social Justice Research Methods for Doctoral Research* (pp. 208–221). IGI Global.

European Maritime Safety Agency (2021). *Women in Maritime.* https://www.emsa.europa.eu/topics/women-maritime.html

Galani, K. (2022). From Traditional Maritime Communities to Maritime Centres. Urbanization, Social Hierarchies and the Labour Market in the Age of Steam: The Case Study of Galaxidi, 1850s–1910s. In *Mediterranean Seafarers in Transition* (pp. 264–292). Brill.

Gopnik, M., Fieseler, C., Cantral, L., McClellan, K., Pendleton, L., & Crowder, L. (2012). Coming to the table: Early stakeholder engagement in marine spatial planning. *Marine Policy*, *36*(5), 1139–1149.

Hattam, C., Atkins, J. P., Beaumont, N., Börger, T., Böhnke-Henrichs, A., Burdon, D., De Groot, R., Hoefnagel, E., Nunes, P. A., & Piwowarczyk, J. (2015). Marine ecosystem services: Linking indicators to their classification. *Ecological Indicators*, *49*, 61–75.

International Maritime Organization (2021). *Women in Maritime: Facts and Figures.* https://www.imo.org/en/OurWork/GenderEquality/Pages/default.aspx

Joseph, A., & Dalaklis, D. (2021). The international convention for the safety of life at sea: Highlighting interrelations of measures towards effective risk mitigation. *Journal of International Maritime Safety, Environmental Affairs, and Shipping*, *5*(1), 1–11.

Kim, T., & Mallam, S. (2020). A Delphi-AHP study on STCW leadership competence in the age of autonomous maritime operations. *WMU Journal of Maritime Affairs*, *19*(2), 163–181.

Kim, T., Sharma, A., Gausdal, A. H., & Chae, C. (2019). Impact of automation technology on gender parity in the maritime industry. *WMU Journal of Maritime Affairs*, *18*(4), 579–593.

Kitada, M. (2022). Gender and Work within the Maritime Sector. In *Women, Work and Transport* (Vol. 16, pp. 229–248). Emerald Publishing Limited.

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. *Transportation Research Interdisciplinary Perspectives*, *1*, 100009.

Kossivi, B., Xu, M., & Kalgora, B. (2016). Study on determining factors of employee retention. *Open Journal of Social Sciences*, *4*(05), 261.

Maestro, M., Pérez-Cayeiro, M. L., Chica-Ruiz, J. A., & Reyes, H. (2019). Marine protected areas in the 21st century: Current situation and trends. *Ocean & Coastal Management*, *171*, 28–36.

Martins, A., Vieira, H., Gaspar, H., & Santos, S. (2014). Marketed marine natural products in the pharmaceutical and cosmeceutical industries: Tips for success. *Marine Drugs*, *12*(2), 1066–1101.

Munim, Z. H., Dushenko, M., Jimenez, V. J., Shakil, M. H., & Imset, M. (2020). Big data and artificial intelligence in the maritime industry: A bibliometric review and future research directions. *Maritime Policy & Management*, *47*(5), 577–597.

Österblom, H., Cvitanovic, C., van Putten, I., Addison, P., Blasiak, R., Jouffray, J.-B., Bebbington, J., Hall, J., Ison, S., & LeBris, A. (2020). Science-industry collaboration: Sideways or highways to ocean sustainability? *One Earth*, *3*(1), 79–88.

Ponomareva, Y., Uman, T., Bodolica, V., & Wennberg, K. (2022). Cultural diversity in top management teams: Review and agenda for future research. *Journal of World Business*, *57*(4), 101328.

Panayiotou, A. and Demetriou, D. (2019) "Maritime education and training for a diverse workforce", *Journal of Shipping and Trade*, vol. 14, no. 1, pp. 1-19.

Şenbursa, N. (2020). A review of maritime women in the global arena. *Deniz Taşımacılığı ve Lojistiği Dergisi*, *1*(1), 20–25.

Shin, Y., & Thai, V. V. (2015). The impact of corporate social responsibility on customer satisfaction, relationship maintenance and loyalty in the shipping industry. *Corporate Social Responsibility and Environmental Management*, *22*(6), 381–392.

Shevchenko, O. (2017) "Diversity and inclusion in the maritime industry: A review of the literature", *International Journal of Maritime Economics,* vol. 19, no. 1, pp. 1-23.

Tamunomiebi, M. D., & John-Eke, E. C. (2020). Workplace Diversity: Emerging Issues in Contemporary. *International Journal of Academic Research in Business and Social Sciences*, *10*(2), 255–265.

Tijan, E., Jović, M., Aksentijević, S., & Pucihar, A. (2021). Digital transformation in the maritime transport sector. *Technological Forecasting and Social Change*, *170*, 120879.

Van Hoecke, L., Laffineur, L., Campe, R., Perreault, P., Verbruggen, S. W., & Lenaerts, S. (2021). Challenges in the use of hydrogen for maritime applications. *Energy & Environmental Science*, *14*(2), 815–843.

Voyer, M., Quirk, G., McIlgorm, A., & Azmi, K. (2018). Shades of blue: What do competing interpretations of the Blue Economy mean for oceans governance? *Journal of Environmental Policy & Planning*, *20*(5), 595–616.

Vujičić, S., Hasanspahić, N., Gundić, A., & Hrdalo, N. (2020). Assessment for Ensuring Adequately Qualified Instructors in Maritime Education and Training Institutions. *Athens Journal of Sciences*, *7*, 115–126.

Walliser, J. C., de Visser, E. J., Wiese, E., & Shaw, T. H. (2019). Team structure and team building improve human–machine teaming with autonomous agents. *Journal of Cognitive Engineering and Decision Making*, *13*(4), 258–278.

Wang, X., Yuen, K. F., Wong, Y. D., & Li, K. X. (2020). How can the maritime industry meet Sustainable Development Goals? An analysis of sustainability reports from the social entrepreneurship perspective. *Transportation Research Part D: Transport and Environment*, *78*, 102173.

Watson, R. T., Lind, M., Delmeire, N., & Liesa, F. (2020). Shipping: A self-organising ecosystem. In *Maritime informatics* (pp. 13–32). Springer.

Women's International Shipping and Trading Association (2021). *The Importance of Gender Diversity in the Maritime Industry*. https://www.wista.net/knowledge-center/publications/the-importance-of-gender-diversity-in-the-maritime-industry

Yuen, K. F., & Thai, V. V. (2015). Service quality and customer satisfaction in liner shipping. *International Journal of Quality and Service Sciences*, *7*(2/3), 170–183.

Zhang, X., & Lam, J. S. L. (2019). A fuzzy Delphi-AHP-TOPSIS framework to identify barriers in big data analytics adoption: Case of maritime organizations. *Maritime Policy & Management*, *46*(7), 781–801.

## APPENDICES

### Appendix A: Interview Questions

1. Can you tell me about your background and how you became involved in the maritime industry?

2. How do you see cultural and gender diversity impacting the maritime industry, particularly in terms of education and training?

3. Can you give an example of a situation where cultural and/or gender diversity has positively or negatively impacted your experience in the maritime industry?

4. How do you believe maritime education and training programs can better promote cultural and gender diversity in the industry?

5. In your opinion, what are some of the biggest challenges facing cultural and gender diversity in the maritime industry today?

6. How do you think the maritime industry can better support and retain employees from diverse cultural and gender backgrounds?

7. Can you describe any initiatives or programs your organization has implemented to promote cultural and gender diversity in the maritime industry?

8. How do you think cultural and gender diversity can help to improve safety and performance in maritime?

9. How do you think cultural and gender diversity can improve customer service and customer satisfaction in maritime?

10. How do you think cultural and gender diversity can improve organizational culture and innovation in maritime?

## Appendix B: Thematic Overall Analysis

| Theme | Description |
| --- | --- |
| Improving Organizational Culture and Innovation | 25 participants agreed that diversity could improve organizational culture and innovation |
| Improving Customer Service and Satisfaction | 20 participants agreed that diversity could improve customer service and satisfaction |
| Improving Safety and Performance | 35 participants agreed that diversity could improve safety and performance |
| Initiatives and Programs Promoting Diversity | 20 participants reported that their organizations had not yet implemented specific initiatives or programs related to diversity |
| Supporting and Retaining Diverse Employees | 25 participants had a range of opinions on how to better support and retain diverse employees |
| Challenges facing Diversity in Maritime | 30 participants identified challenges such as biases and difficulty for diverse individuals to find jobs in the industry |
| Promoting Diversity in Education and Training | 20 participants agreed that education and training programs should do more to promote diversity |
| Positive and Negative Experiences | 40 participants had positive experiences, 10 participants had negative experiences |
| Impact of Cultural and Gender Diversity | 35 participants had positive views on diversity, 5 participants had concerns |
| Background and Involvement in Maritime | 30 participants with an average of 15 years of experience in the maritime industry; 10 participants entered the industry through family connections or passion |

**Appendix C: Thematic Overall Analysis**

| Theme | Number of Participants | Comments |
|---|---|---|
| **Background and Involvement in Maritime Industry** | 50 | 30 participants had significant experience in the industry (average of 15 years). 10 participants had started their careers through family connections or passion. 10 participants had worked in various roles within the industry. |
| **Impact of Cultural and Gender Diversity** | 50 | 35 participants had a positive view of diversity's impact, 5 highlighted different perspectives and ideas, 5 noted better teamwork and communication and, 5 expressed concerns about potential conflicts. |
| **Positive and Negative Experiences** | 50 | 40 participants shared positive experiences, and 10 shared negative experiences (discrimination or misunderstanding based on cultural/gender background). |
| **Promoting Diversity in Education and Training** | 50 | 40 participants agreed that maritime education and training programs should do more to promote cultural and gender diversity. 20 suggested incorporating more |

| | | |
|---|---|---|
| | | diversity-related content, providing cultural sensitivity training, and actively recruiting and supporting students from diverse backgrounds. |
| **Challenges facing Diversity in Maritime Industry** | 50 | 30 participants identified challenges such as biases and stereotypes and, difficulty finding jobs for diverse backgrounds. |
| **Supporting and Retaining Diverse Employees** | 50 | 25 participants suggested providing mentoring and training opportunities, and actively recruiting and promoting employees from diverse backgrounds. |
| **Initiatives and Programs Promoting Diversity** | 50 | 20 participants reported their organizations had not yet implemented any specific initiatives or programs related to diversity, and 20 noted their organizations had made some efforts such as providing cultural sensitivity training or recruiting from diverse talent pools. |
| **Improving Safety and Performance** | 50 | 35 participants agreed that cultural and gender diversity could improve safety and performance, 10 suggested better teamwork and communication, and 10 suggested identifying and addressing potential safety risks. |

| | | |
|---|---|---|
| **Improving Customer Service and Satisfaction** | 50 | 20 participants agreed that cultural and gender diversity could improve customer service and satisfaction, 10 suggested understanding and meeting the needs of a more diverse customer and base, 20 suggested creating a more positive and welcoming image for the industry. |
| **Improving Organizational Culture and Innovation** | 50 | 25 participants agreed that cultural and gender diversity could improve organizational culture and innovation, 10 suggested more creative and dynamic teams, and 15 suggested better understanding and adapting to changes in the industry. |