

# GENDER EQUALITY IN THE BLUE ECONOMY: ARCTIC SEA BASIN REPORT

Sea Basin Report



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# Executive Summary

## NAVIGATING THE TIDES OF INEQUALITY: Women in the Arctic Blue Economy



### WOMEN IN THE WORKFORCE



\* Iceland, Finland, Norway, Sweden

### EU BLUE ECONOMY LABOUR FORCE

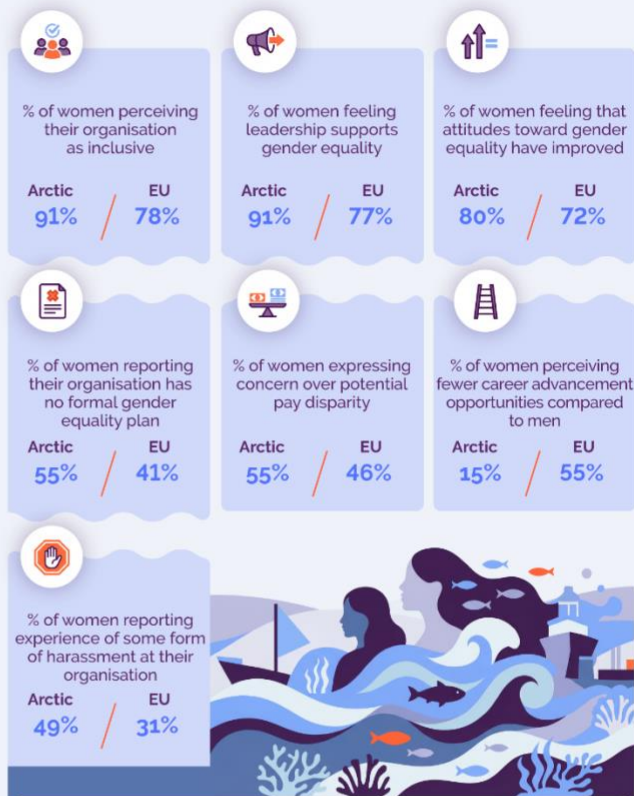
EU	Arctic Basin
Female 2,941,850	Female 254,369
Male 4,130,743	Male 375,139
Total 7,072,593	Total 629,508

### Strong sectoral contrasts



Women report higher access to training (88% vs 39% of men)

### WORKPLACE REALITY FOR WOMEN: ARCTIC VS EU



### KEY INSIGHT

A strong culture, unresolved risks:  
Women in the Arctic Sea Basin report high inclusivity and leadership support, but also face high levels of harassment, pay uncertainty, and limited confidence in formal gender policies.

### CHARTING THE COURSE: POLICY RECOMMENDATIONS FOR EQUALITY



- **Gender-disaggregated data:** Mandate harmonised EU-wide reporting on employment, pay, and career progression by gender across blue economy sectors. Use the data to track progress and inform targeted policy action.
- **Gender equality plans:** Require organisations to adopt formal gender equality plans with measurable targets, timelines, and accountability mechanisms. Link implementation to monitoring and compliance frameworks.
- **Zero tolerance for harassment:** Enforce zero-tolerance standards through clear reporting channels, independent procedures, and protection for complainants. Make safe workplaces a non-negotiable condition for sector growth.
- **Pay and promotion transparency:** Introduce mandatory transparency in pay structures and promotion criteria. Use audits and reporting to address gender pay gaps and unequal advancement.
- **Training and mentorship in STEM and offshore sectors:** Invest in targeted training, upskilling, and mentorship for women in STEM-intensive and offshore industries. Prioritise pathways into technical and leadership roles in high-growth blue sectors.
- **Inclusive education and awareness:** Strengthen education and awareness campaigns highlighting the economic and innovation benefits of gender parity.

## Introduction

The goal of the WIN-BIG project is to advance our understanding of existing gender issues and capacity needs across the EU's blue economy, with a particular focus on emerging and high-tech related industries. Three major challenges have been identified by WIN-BIG: a lack of gender disaggregated statistics, the underrepresentation of women in certain blue economy sectors, and insufficient opportunities for women. Such challenges can act as barriers to female empowerment and limit their access to career advancement and leadership roles.

The WIN-BIG project strives to shed light on gender inequalities in the blue economy sectors within six different Sea Basins in Europe, using data collected from a bespoke survey designed for this project. The survey results are used to identify institutional and industry factors that impact female career advancement. The research also produces estimates of the labour force in the blue economy disaggregated by sex. The following report provides a first set of data on the current gender status for the Arctic Sea Basin's blue economy - comprising Iceland, Finland, Norway, Sweden. The project has also produced separate reports for: the Atlantic, the Baltic Sea, the Black Sea, the Mediterranean and the North Sea Basins.

## Methodology

The methodology of the WIN-BIG Survey combined both quantitative and qualitative research approaches to assess gender inequalities across the EU blue economy. A multilingual online survey was developed through an iterative process informed by desk research, focus groups, and stakeholder consultations, ensuring cultural and linguistic clarity across seven languages. The final questionnaire included seven sections covering respondents' blue economy industry characteristics, work arrangements, gender culture, career progression, gender policies, and personal demographics, with one section dedicated to female respondents only.

The survey was distributed between March 2024 and November 2025 via email, social media, and events, collecting 1,084 responses (**92 from the Arctic Sea Area**). To ensure the survey captures issues that affect women differently compared to men, responses from both males and females were collected. Data were processed in compliance with GDPR, analysed using Excel and STATA, and weighted post-stratification techniques were applied to adjust for representativeness across industries, countries, and gender. Additionally, official EU data sources were used to estimate total employment and gender distribution across the blue economy sectors, with proxy estimates applied when direct data were unavailable.

Given the low number of respondents to the survey from the Arctic Sea Basin the results reported here should not be taken as representative of workers across the region's blue economy. They can only be seen as a snapshot of attitudes towards gender inequalities in the blue economy sectors within the Sea Basin.



## Results for the Arctic Sea Basin

In the Arctic Sea Basin:

- Females represent **40% of the total blue economy labour force** across Iceland, Finland, Norway, Sweden.

Notable sectoral disparities exist, with

- Female participation is highest in **coastal tourism, public administration, and research and higher education** sectors where women comprise **47-57%** of the workforce.
- Female representation is below **35%** in traditionally male-dominated fields such as **offshore energy, maritime transport, offshore/marine engineering, and shipbuilding**.

These patterns mirror global findings from the **World Economic Forum's 2025 Global Gender Gap Report**, which notes that gender parity remains uneven across STEM-intensive and leadership roles, with Europe still requiring nearly **eight decades to close the gap at current rates**.

## Workplace Culture

The findings from the WIN-BIG survey for the Arctic Sea Basin largely include responses from research related sectors:

- **91%** of female respondents perceiving their **organisations as inclusive** and **91%** believing **leadership supports gender equality**.
- However, **10%** of female respondents report direct experiences of **gender discrimination** and
- **49%** have suffered some form of **harassment within their organisations (52% female and 47% male)**.
- Despite widespread access to flexible working arrangements reported, **only 39%** of female respondents **find it possible to achieve work-life balance**, 59% chose the neutral response and 2% disagreed.
- Higher number of female respondents' report **access to training** than males (88% female vs. 39% males).

The perception gap between male and female is notable around the existence of gender policies:





- while **71% of male respondents** believe gender balance policies exist in hiring, **55%** of female respondents agree, and **nearly half** of females (**41%**) say they are not sure and 5% disagreed that their **organisations have a formal gender plan**.
- **55%** of female respondents **suspect or are unsure they are paid less than male colleagues** doing the same job. Despite **80%** of women **acknowledging that attitudes toward gender equality have improved**, 72% think that it will take **more than 10 years to reach parity within their industries**.

These results echo global findings by the **OECD (2025)** and **UN Women (2024)**, which emphasize that while legislative progress and awareness have advanced gender equality frameworks, persistent structural and cultural barriers—particularly around pay transparency, career progression, and representation in STEM—continue to slow real parity in the workforce.

#### **How the Arctic area compares with the total sample (including all sea-basins listed above).**

In total, WIN-BIG estimates that 7,072,593 people are working in the EU blue economy sectors, out of which 42% are female. In the Arctic Sea Basin, a total of 629,508 people work in the blue economy, out of which 254,369 (40%) are women.

EU Blue Economy Labour Force				
	Female	Male	Total	% Female
Blue Economy EU Total	2,941,850	4,130,743	7,072,593	42%
Blue Economy Arctic Basin	254,369	375,139	629,508	40%

The Arctic Sea Basin results often include a higher percentage of positive responses related to questions on inclusion and organisational culture, compared to the total sample. However, a higher percentage of female respondents in the Arctic Sea Basin reported harassment, compared to the total sample. In addition, a higher percentage of females in the Arctic Sea Basin are unsure whether gender policies are in place at their organisations, compared to the total sample.

- **91%** of female respondents in the **Arctic Sea Basin region** report their **organizations are friendly and inclusive**, compared to **78% in the total sample**.
- In the **Arctic Sea sample**, **91%** of female respondents believe leadership supports **gender equality**, compared to **77%** of females across the **total sample**.



- Approximately **15%** of the **total sample** and **4%** in the **Arctic Sea sample** reported having experienced **gender discrimination** at work, **10%** of **females** in the **Arctic sample** have experienced **gender discrimination**.
- In the **Arctic Sea sample**, **49% of all respondents** reported experience of some form of **harassment at their organization**, compared to 31% in the **total sample**; almost **half of females** in the total sample (46%) and more than half (52%) of females in the Arctic Sea have experienced **harassment**.
- Among **females**, **55% of total sample** perceive **fewer career advancement opportunities** compared to men. In the **Arctic Sea**, **15% of females** share this view.
- **41% of females in the total sample** and **5%** of **females** in the **Arctic Sea Basin** noted their organisations **do not** have a formal **gender plan** (a further **41% of respondents in the Arctic are unsure** whether such policy/plan exist).
- A significant percentage of women in the Blue Economy express concern over **potential pay disparity: 46% of females** in the **total sample** compared to **55% females** in the **Arctic Sea Basin**.

Across the **total sample**, **72% of female respondents** feel that **attitudes** toward gender equality have **improved**, this compares to **80%** in the **Arctic Sea Basin**.

## Conclusions

The findings indicate:

- Progress in promoting gender equality within the Arctic Sea blue economy; however, persistent significant structural and perceptual barriers remaining that continue to impede parity.
- Women are prominently represented in service-oriented and academic sectors; however, they remain **underrepresented in STEM-intensive and offshore industries**, where **advancement opportunities are often limited**.
- Despite overall positive perceptions of inclusivity and leadership commitment to equality, **many women continue to experience discrimination, harassment, and unequal access** to training and promotion pathways.

These findings suggest that gender equality strategies in the **blue economy** must **evolve beyond policy adoption** towards active **implementation, monitoring, and accountability** to ensure measurable progress in representation, pay, and leadership equity.

## Policy Recommendations

This report also provides guidance on potential policy frameworks aimed at further narrowing the gender gap within the Arctic Sea Basin blue economy. Suggested policy recommendations at European level call for:

- the **systematic collection of gender-disaggregated data** across blue economy sectors, supported by a harmonised and mandatory EU-wide reporting framework, to track workforce composition and career outcomes more accurately.
- the introduction or strengthening of **formal gender equality plans** in organisations.
- enforcing **zero-tolerance policies toward harassment**.
- enhancing **transparency in pay and promotion criteria**.
- expanding **training initiatives and mentorship programmes for women**, particularly in STEM and **emerging blue sectors** like marine renewable energy and biotechnology, to improve women's access to technical and leadership roles.
- expanding **inclusive education and awareness campaigns** that target both men and women to highlight the economic and innovation benefits of gender parity.

Ultimately, accelerating equality in the blue economy will require sustained political commitment, evidence-based policy design, and coordinated action across EU institutions, member states, and industry partners to close the remaining gender gaps within a generation.

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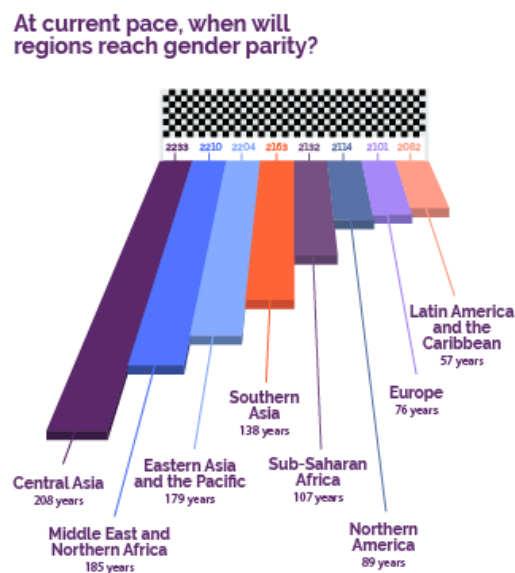


# Introduction

The WIN-BIG project addresses the lack of knowledge on the role women play in the EU Blue Economy sectors. It provides data on women's status and skill gaps that prevent women from entering or progressing up the career ladder. In addition to data gathering, the project provides capacity building, focusing on the EU three emergent sectors, blue bioeconomy, blue sports and coastal tourism and marine renewable energy and robotics. The WIN-BIG project also champions blue female role models using innovative media format. These objectives are in line with the EU goals.

Gender equality and advancing women's rights are normative values of the EU and have been recognized as economic and strategic investments. (European Commission, 2025; OECD, 2025). Various pieces of legislation have been adopted in recent years, such as the Directives on Work-Life Balance, Pay Transparency, and Gender Balance on Corporate Boards (European Commission, 2024). However, bridging existing gender disparities remains a slow process and data shows that in Europe alone another eight decades are needed at current speed to reach parity (Figure 1). Women are still overrepresented in low-paid jobs, carry a disproportionate share of household duties and care responsibilities, have less opportunities for training in such sectors as science, technology, engineering and mathematics (STEM) and face higher risks of violence (European Commission, 2025).

*Figure 1 Current estimate of years needed to close the Gender Gap across the world (from the World Gender Gap Report 2025).*



Source: World Economic Forum (2025)

## The EU Blue Economy and Gender Inequalities

The EU's blue economy is multisectoral, encompassing a wide range of traditional and emerging sectors - from maritime transport, fisheries to blue biotechnology and marine renewable energy. In 2023, the EU blue economy's gross value added (GVA) reached EUR 263 billion, and it employed 4.89 million people in the EU (European Commission, 2025). It is a segment of economy characterized by continued growth, energy and digital transition, and new job opportunities. The EU Blue Economy observatory estimates that a total of 203,827 people are employed in the Arctic Sea Basin<sup>1</sup>.

Certain sectors of the EU blue economy face not only the challenge of underrepresentation of females, but also a gendered division of labour by occupation. In fisheries, research shows that women are more often in charge of selling or processing the catch, while men are involved in the fishing activities and the preparation of fishing gear (Salmi and Sonck-Rautio (2018). The existing horizontal gender segregation (the concentration of women in certain fields) is paired with vertical gender segregation. Research in areas such as ocean science illustrates this dual gap, noting not only overall lower representation of women but also their significant underrepresentation in senior and decision-making roles (Katsanevakis et al., 2020 and Kamm, Schelten and Braker, 2020).

Gender inequalities also manifest in terms of access to opportunities. Studies note that limited access to training and mentorship opportunities hinders women's career advancement and ability to reach managerial positions (Croucher and Økland, 2021; Johannesen et al, 2023; Shellock et al., 2022; Zhao et al. 2013).

## WIN-BIG Objectives

The WIN-BIG project, funded by the European Commission, aims to deepen understanding of gender issues in the Blue Economy and support women's career entry and advancement within the sector. Specifically, WIN-BIG is gathering comprehensive data on gender representation, the roles women play, and the barriers they face across all six EU Sea Basins.

The project's three core objectives are:

1. **Establish a comprehensive dataset** detailing the gender status and roles of women across all **six EU Sea Basins** (Atlantic, Mediterranean, Baltic, North, Arctic, and Black Sea) within the Blue Economy (BuE).
2. **Identify critical skill gaps** that hinder women's entry into or progression up the career ladder in BuE sectors.
3. **Implement targeted capacity-building programs**, including female- and sea basin-specific **learning labs, acceleration programs, and networking events**.

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<sup>1</sup> Note: The Blue economy sectors of the EU Blue Observatory are maritime transport, coastal tourism, living resources, non-living resources, port activities, renewable energy, shipbuilding and repair. The Observatory does not include estimates for Iceland and Norway. Also, the Observatory does not include the workforce in the research related sectors of the blue economy. The EU Blue economy observatory website is available at: [https://blue-economy-observatory.ec.europa.eu/blue-economy-indicators\\_en](https://blue-economy-observatory.ec.europa.eu/blue-economy-indicators_en)

For this report, academic and policy research was reviewed to define the EU blue economy industries. For instance, previous studies on blue economy concepts - such as the harvesting of living resources, extraction of non-living resources, and ecosystem protection and management - helped guide the classification adopted in this study (e.g. Smith Godfrey, 2016; Voyer et al, 2018).

Figure 2 presents the blue economy sectors and industries. Final sector and industry grouping were based on the EU Blue Economy sectors specifications with some minor differences<sup>2</sup>.

*Figure 2 Blue economy sectors and industries adopted in this study.*

SECTOR	INDUSTRY
 Living resources	Aquaculture   Sea fisheries   Seafood processing
 Blue biotechnology	Blue bioeconomy/biotechnology
 Coastal tourism	Blue sports   Coastal tourism   Cruise tourism
 Marine renewable energy and offshore exploration (oil and gas)	Marine renewable energy   offshore exploration (gas and oil)
 Ports and shipping	Maritime transport   Port activities   Shipbuilding
 Public administration related to the marine	Public Administration related to the marine
 Engineering and technology	Marine engineering   Marine robotics   Desalination   Maritime defence
 R&D related to the marine	Marine research and development
 Research and marine education (third level)	Marine Education/Training/Research (Third level)   Marine Conservation and Advocacy
 Market services	Marine Environmental Consulting Services   Marine Retail Services   Business and finance

<sup>2</sup> European Commission, EU Blue Economy Observatory, EU Blue Economy Sectors: [https://blue-economy-observatory.ec.europa.eu/eu-blue-economy-sectors\\_en](https://blue-economy-observatory.ec.europa.eu/eu-blue-economy-sectors_en)

### EU Sea Basin-Level Analysis

This report is one of six sea basin reports of the WIN-BIG project. The analysis includes EU member states and countries that are part of the European Economic Area, bordering an ocean or sea. The research also covers the United Kingdom, due to the UK-EU Trade and Cooperation Agreement. Table 1 lists the EU Sea Basins and its bordering countries. The EU Sea basin countries in each report are defined according to the geographic delineation as established in the EU Baseline studies for the implementation of the lighthouse for the Mission “Restore our Ocean and Waters by 2030” (Chanou Zoulfath et al., 2023; Goba et al., 2023)<sup>3</sup>.

Table 1 EU Sea Basins (according to the EU Baseline Studies for the Ocean and Waters Mission).

EU Sea Basins	
Arctic Basin	Iceland, Finland, Norway, Sweden
Atlantic Basin	Ireland, United Kingdom, France, Portugal, Spain
Baltic Sea	Germany, Poland, Estonia, Latvia, Lithuania, Denmark, Sweden, Finland
Black Sea	Bulgaria, Romania
Mediterranean Sea	Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia, Spain
North Sea	United Kingdom, Belgium, France, Germany, Netherlands, Denmark, Sweden, Norway

### Arctic Sea Basin Industries Gender Breakdown

This report presents estimates of total employment in the Blue Economy in the Arctic Sea Area by industry and gender. To establish a baseline estimate of total employment by Blue Economy industry and gender, WIN-BIG analysed officially published data and statistics.

The analysis estimates that a total of 629K people are employed across the EU Blue Economy industries in the Arctic Sea Basin. **Overall, WIN-BIG estimate women account for approximately**

<sup>3</sup> Two reports were used to define the EU sea basin countries: Chanou Zoulfath, A. et al. (2023) Baseline study for the implementation of lighthouses of the Mission ‘Restore our ocean and waters by 2030’: Atlantic, Arctic, Danube and Mediterranean lighthouses. Luxembourg: Publications Office of the European Union; Goba, V. et al. (2023) Baseline study for the implementation of the lighthouse in the Baltic and North Sea basins for the Mission ‘Restore our Ocean and Waters by 2030’. Luxembourg: Publications Office of the European Union. Following this approach, countries not bordering an ocean and sea are excluded. In line with the lighthouse studies, where a country borders more than one sea basin they are duplicated in each relevant report: Sweden borders the Arctic, North Sea and Baltic so are included in those sea basin reports. Similarly, Norway borders the Arctic and North Sea and Finland borders both the Arctic and Baltic and are included in those respective reports.

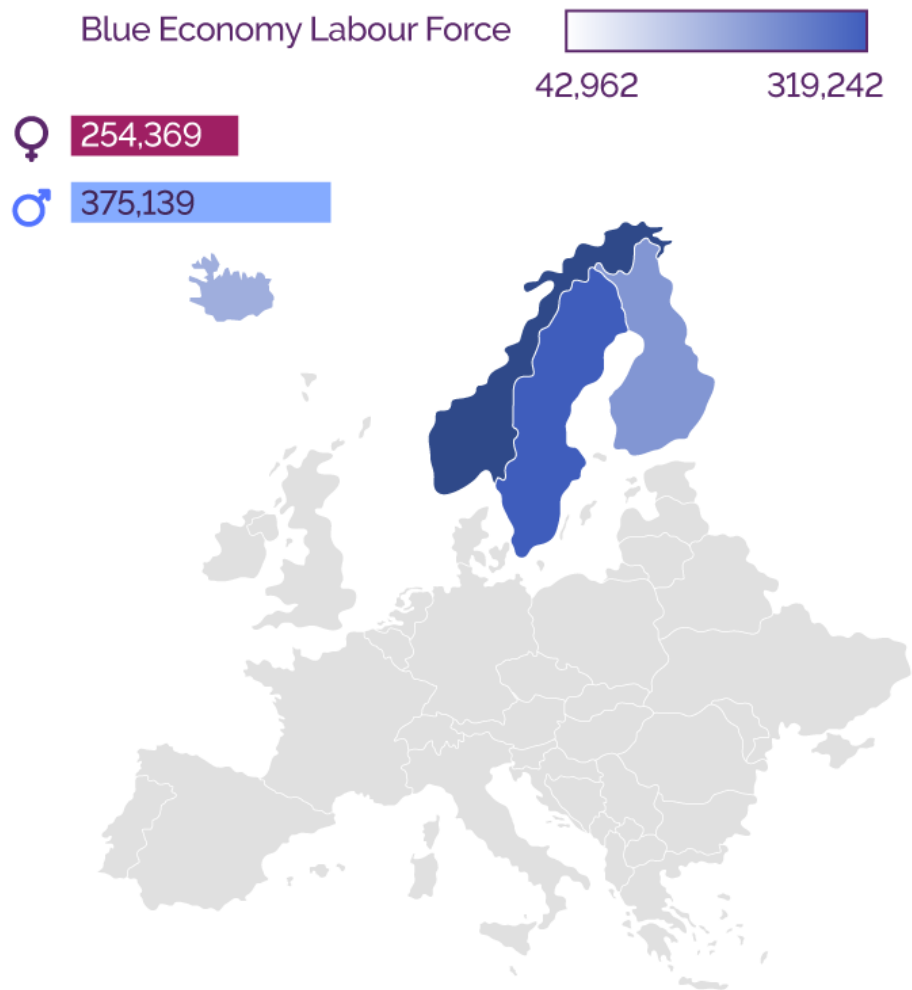
**40% of the total workforce in the blue economy in the Arctic Sea Basin.** Table 2 presents the gender breakdown of the workforce in each industry.

*Table 2 Number of employees across the Blue Economy sectors, broken down by gender*

Labour force of the Arctic Sea Basin			
Blue Economy Sector	Female	Male	% Female
Living resources	20,121	41,473	33%
Blue biotechnology	145	166	47%
Coastal tourism	133,203	124,925	52%
Marine renewable energy and offshore exploration (oil and gas)	40,170	83,401	33%
Engineering and technology	12,843	26,222	33%
Ports and shipping	14,742	53,901	21%
Research and marine education (third level)	2,307	2,569	47%
R&D related to the marine	6,387	12,364	34%
Public administration related to the marine	5,978	4,444	57%
Market & Services	18,473	25,674	42%
Total	254,369	375,139	40%

Figure 3 illustrates the employment number in the Arctic Sea Basin countries. Norway and Sweden have the highest number of employees in the blue economy followed by Finland and Iceland

Figure 3 Distribution of the workforce across the Arctic Sea countries



	Total	Female	Male
Finland	79,900	33,030	46,870
Sweden	187,404	86,071	101,333
Iceland	42,962	17,198	25,764
Norway	319,242	118,070	201,172

# Methodology

In an attempt to capture the data required for WIN-BIG, a comprehensive survey was designed, tested and data was collected between June 2023 and November 2025. The survey was translated into seven languages to for inclusivity and accessibility for respondents across different countries.

The methodology involved a desk review stage to design the survey sections and its questions. Following the design and testing of the survey, the survey was launched, and data was collected from the employees of the blue economy sectors. Following the data collection, post stratification weights were generated to make the sample representative of the true marine workforce population.

Figure 4 Stepwise methodology followed in this study.



## Questionnaire Design

Prior to designing the questionnaire, a focused desk review was undertaken to inform the design. Previous surveys on gender inequalities in the workplace were consulted. For example, surveys related to institutional culture used to inform *Athena Swan* accreditation in higher education were useful to design Likert Scale questionnaire questions on topics related to work culture, promotion and work-life balance<sup>4</sup>. A survey by *Equileap*<sup>5</sup> on gender representation at the corporate level and its Gender Equality Scorecard were reviewed to understand concepts around equal compensation, gender equality policies and employee protection. Other surveys, such as *Women in Tech*, conducted in 2023<sup>6</sup> were also utilised to inform relevant topics and questions.

Early versions of the questionnaire were tested using focus groups. Further discussions across the WIN-BIG consortium and at a special session of the conference *1<sup>st</sup> Mission Ocean Arena: Blue Mission BANOS - Supporting the EU Mission "Restore our Ocean and Waters* in the Baltic and North Sea in November 2023 led to some further refinements of the survey instrument. The focus group

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<sup>4</sup> The Athena Swan Charter is a framework which is used across the globe to support and transform gender equality within higher education (HE) and research, <https://www.advance-he.ac.uk/equality-charters/athena-swan-charter>

<sup>5</sup> Equileap, Social Equality Data: <https://equileap.com/data/>

<sup>6</sup> Women in Tech Survey 2023: <https://www.womenintech.co.uk/wp-content/uploads/2022/12/Women-in-Tech-Survey-2023.pdf>



discussions ensured that the questions were similarly interpreted and understandable across different countries and languages.

The final questionnaire was divided into seven sections described below:

**1. Industry and firm:** This section collected data on the respondent's blue economy sector, type of organisation, country of operation, number of employees, and the percentage of female employees within the organisation.

**2. Working arrangements and culture:** This section collected data on respondents' employment level, employment status, and years in their current role. It also included questions about whether respondents had taken any periods of carer's leave, as well as questions on workplace culture and work-life balance.

**3. Gender culture and treatment within organisation/firm:** This section aimed to assess respondents' perceptions of gender discrimination, whether they had encountered any forms of harassment, and whether the organisation's leadership was committed to gender equality, diversity, and inclusion.

**4. Perception of opportunities for career progression:** This section collected information on the transparency of internal vacancy applications, access to career growth opportunities, and the challenges respondents have faced in pursuing a career in the blue economy sector.

**5. Women in the work force:** This section collected data on whether the respondent's firm has gender equality policies, the presence of female managers and role models, and whether there are barriers preventing women from being promoted to senior positions. This section also includes a qualitative question asking why women might not have the opportunity to advance in their industry.

**6. Female only section:** This section collected information from female respondents only. It collected data on the gender pay gap, their perceptions of whether they are treated equally to men in the workplace, and whether they have the same promotion opportunities as their male counterparts. This section also includes qualitative questions to collect recommendations from females on how to achieve more gender equality.

**7. Personal demographics:** This section collected demographic data such as respondents' age, country of residence, ethnicity, marital status, caring responsibilities and level of education.

## Data collection

The online WIN-BIG survey was launched on March 8<sup>th</sup>, 2024, and remained open until 17<sup>th</sup> of November 2025. It was conducted online via the Qualtrics surveying platform and was available in seven languages: English, Spanish, Portuguese, French, German, Italian, and Irish. A link to the survey was disseminated to various blue economy organisations via email, social media, paid advertising and during national and international events by the Consortium partners. A total of 1,244 responses were collected. Out of this number, 59 responses were from non-European countries and 7 were from European countries that do not have access to ocean or sea. The 59 non-European and 7 non-ocean responses were removed from the analysed sample reducing the number to 1,178 which covered the EU sea basins. Following further cleaning of the dataset, a further 94 responses were removed from the final analysis: 20 responses were completed by students, and 74 respondents completed only section one of the survey which covered basic information about their gender and the sector they belonged to, so they were removed from the main analysis. As a result, 1,084 responses are analysed. The data sample for Arctic Sea area include 92 responses, which is the data used for this report.

All data was handled in compliance with confidentiality requirements and the General Data Protection Regulation (GDPR). The data was analysed using Microsoft Excel and the statistical software package STATA.

## Weighting and analysis

Given this was a voluntary opt-in survey it was important to generate post stratification weights to make the sample representative of the true marine workforce population. The estimated population totals by blue economy industry, country and gender facilitated the creation of a multidimensional weighting scheme. All results presented use the generated post stratification weights, unless otherwise stated.

There is a lack of gendered statistics in the EU blue economy. Furthermore, while the EU blue economy observatory provides information about total workforce in certain sectors (e.g. living resources, coastal tourism, ports and shipping) there is no data about the workforce in such industries as marine robotics, higher education and research related to marine, environment consulting, marine conservation and advocacy. For the blue economy sectors, where no data was available, the number of employees in a broader industry category was collected, followed by an estimate of the marine share. For example, there is not data about the total workforce in the *marine robotics*. To estimate its labour force, several indicators were used. Based on the number of employees in the *Equipment and machinery subcategory* published by the EU Blue Economy Observatory<sup>7</sup> and the total number of employees in *Manufacturing of machinery and equipment* from

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<sup>7</sup> Note: there were some countries where no data was provided in the Blue Economy Observatory. Individual country reports or other sources were consulted to provide an estimate of the workforce.

Eurostat, the marine share was estimated in engineering. Next, this estimated marine share was applied to the total number of employees in *Science, technology and digital society* category from Eurostat, to estimate the number of employees in marine robotics. In terms of the gender breakdown, data was collected where sector-specific gender information was directly available. This was only available for the living resources and maritime defence. In cases where there was no gender breakdown at the blue economy industry level, gender distribution of the broader sector which the industry was contained in was used as a proxy. For example, while no gender specific information was publicly available for coastal tourism across countries, Eurostat does provide estimates for gender at the national level for NACE industries such as accommodation and restaurant activities. Similarly, *Public administration related to marine* used the parent sector *Public administration* to generate a proxy for gender shares. [Annex 1](#) provides detailed information about the data.

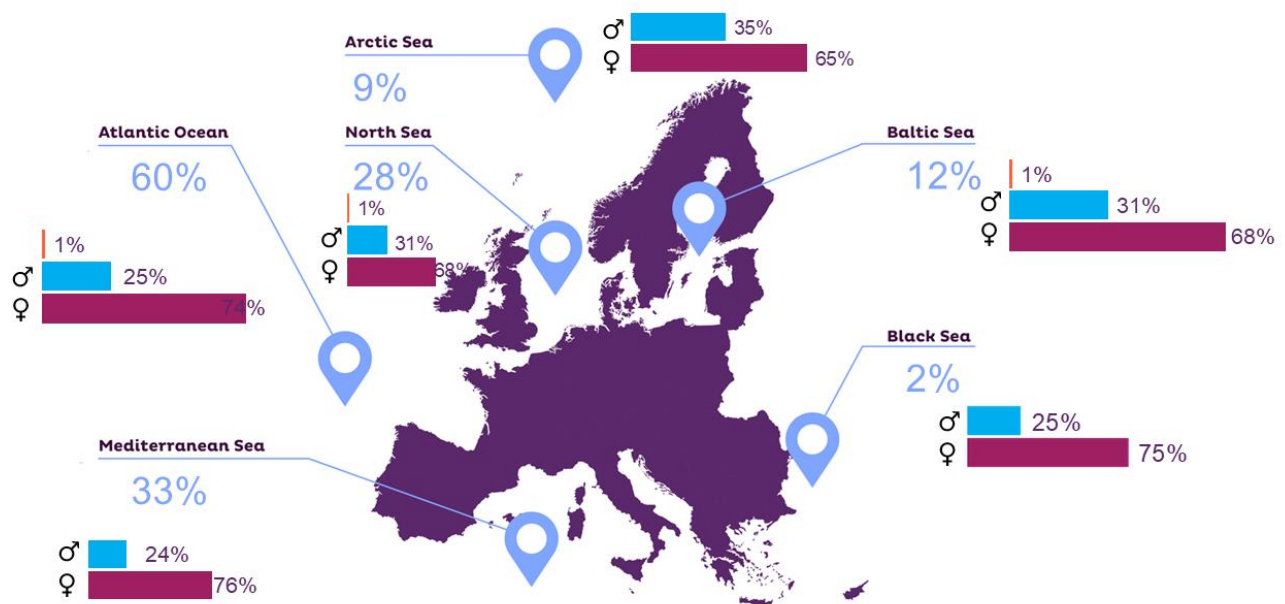
# Survey Results

## SUMMARY OF WIN-BIG SURVEY RESPONDENTS DEMOGRAPHIC STATISTICS

This next section describes in detail the obtained results and statistics derived from the WIN-BIG survey data.

Figure 5 presents the gender distribution of respondents across the sea basins. The percentages shown are based on the unweighted survey sample. Across all basins, women accounted for more than 68% of the respondents within the Mediterranean, Atlantic, and Black Sea basins showing the highest proportions of female respondents.

*Figure 5 Distribution of gender of respondents across the sea basins (unweighted)*



### Arctic Sea Basin

As shown in Figure 5, **9% of the respondents to the WIN-BIG survey were from the Arctic Sea Basin** countries, with 65% female respondents and 35% male. The low response rate means that the results presented here for the Arctic Sea Basin are not representative of the population and have limited the type of analysis that could be performed. They provide only a snapshot of possible attitudes towards gender issues in the Arctic Sea Basin blue economy.

Table 3 presents the percentage of respondents by EU Blue Economy sector across all the EU sea basins. In the Arctic Sea Basin, the largest shares of respondents are in research and marine education (tertiary level) (21%), marine-related R&D (20%), living resources (17%) and blue biotechnology (11%).

*Table 3 Survey sample per sector (unweighted) across the EU sea basins*

Survey sample per sector (unweighted)						
Blue Economy Sector	Arctic Basin	Atlantic Basin	Baltic Sea	Black Sea	Mediterranean Sea	North sea
Living resources	<b>17%</b>	12%	10%	8%	7%	12%
Blue biotechnology	<b>11%</b>	7%	13%	0%	6%	11%
Coastal tourism	<b>0%</b>	9%	1%	4%	6%	2%
Marine renewable energy and offshore exploration (oil and gas)	<b>2%</b>	5%	4%	0%	2%	6%
Engineering and technology	<b>9%</b>	7%	0%	13%	6%	7%
Ports and shipping	<b>6%</b>	7%	26%	8%	10%	15%
Research and marine education (third level)	<b>21%</b>	18%	16%	29%	21%	17%
R&D related to the marine	<b>20%</b>	15%	23%	17%	16%	15%
Public administration related to the marine	<b>6%</b>	11%	4%	4%	13%	9%
Market & Services	<b>0%</b>	5%	1%	8%	8%	2%
Not specified	<b>8%</b>	4%	2%	8%	5%	4%

Table 4 presents the demographic information for the total sample and Arctic Sea Basin respondents, with the post-stratification weights assigned. The percentage of female respondents (57%) is slightly higher compared to male respondents in the weighted Arctic Sea sample.

Table 4 Personal demographic information of respondents the percentage for the total sample and the Arctic Sea Basin

Background of Respondents		
Gender of respondents	Total Sample %	Arctic %
Gender female	50%	57%
Gender male	50%	43%
Age	Percent	Percent
18-25	4%	5%
26-35	13%	7%
36-45	22%	12%
46-55	36%	46%
56-65	23%	29%
65 +	2%	1%
Ethnicity	Percent	Percent
White (Caucasian)	95%	95%
Black	<1%	0%
Asian	<1%	<1%
Mixed ethnicity	4%	3%
Other	<1%	1%
Marital status	Percent	Percent
Married	51%	41%
Cohabiting	16%	26%
Single	25%	28%
Separated/Divorced/Widowed	8%	5%
Caring responsibilities (e.g. caregiver to children, child with disability, elderly parents, etc.)	Percent	Percent
Yes	40%	40%
No	59%	56%
Prefer not to say	1%	4%

Education level	Percent	Percent
Primary level, or equivalent	<1%	0%
Secondary level, or equivalent	6%	4%
Bachelor's, or equivalent third level	15%	45%
Master's, or equivalent third level	60%	35%
Doctoral or equivalent third level	18%	14%
Other industry specific qualification	1%	1%
Prefer not to say	<1%	<1%

Over half (58%) of the of the Arctic Sea Basin sample consists of employees aged between 36–55. The majority of respondents were white Caucasian (95%). More than half of the sample (67%) were married or cohabiting and approximately 40% of respondents have some type of caring responsibilities. A high proportion of respondents were also highly educated with 35% of respondents have a Master's degree, and 14% have a Doctoral degree.



# GEOGRAPHICAL DISTRIBUTION OF WIN-BIG SURVEYED INDUSTRIES AND FIRMS

To contextualize the respondents' professional settings, this section reports findings on industry and firm characteristics, including the blue economy sector, organizational type, country of operation, firm size, and the share of female employees within organizations.

Table 5 displays the breakdown of the Arctic Sea Basin respondents' industry and the country they work. A large proportion of respondents work in Norway (60%) and Sweden (27%). The sample of respondents in Iceland is small and limits the extent of the analysis in many questions.

*Table 5 Country and Industry where the respondents' work: Arctic Sea Basin*

Respondents Country and Industry: Arctic Sea Basin	
Country where respondents' organisation is based	Percentage
Finland	13%
Iceland	1%
Norway	60%
Sweden	27%
BE sector <sup>8</sup>	Percentage
Living resources	17%
Blue biotechnology	11%
Coastal tourism	0%
Marine renewable energy and offshore exploration (oil and gas)	2%
Engineering and technology	9%
Ports and shipping	6%
Research and marine education (third level)	21%
R&D related to the marine	20%
Public administration related to the marine	6%
Market & services	0%
Unspecified Blue Economy Industry	8%

<sup>8</sup> The percentages for the blue economy sectors are not weighted.

The **highest percentage of the survey sample is in research and marine education (tertiary level) (21%), marine-related R&D (20%), living resources (17%) and blue biotechnology (11%).** Engineering and technology, ports and shipping, marine renewable energy and public administration represent a small sample.

Figure 6 illustrates gender distribution across the Arctic Sea countries: there is a higher percentage of female respondents in Sweden (75%). A lower number of female respondents work in Norway (27%).

Figure 6 Gender distribution across the Arctic Sea countries

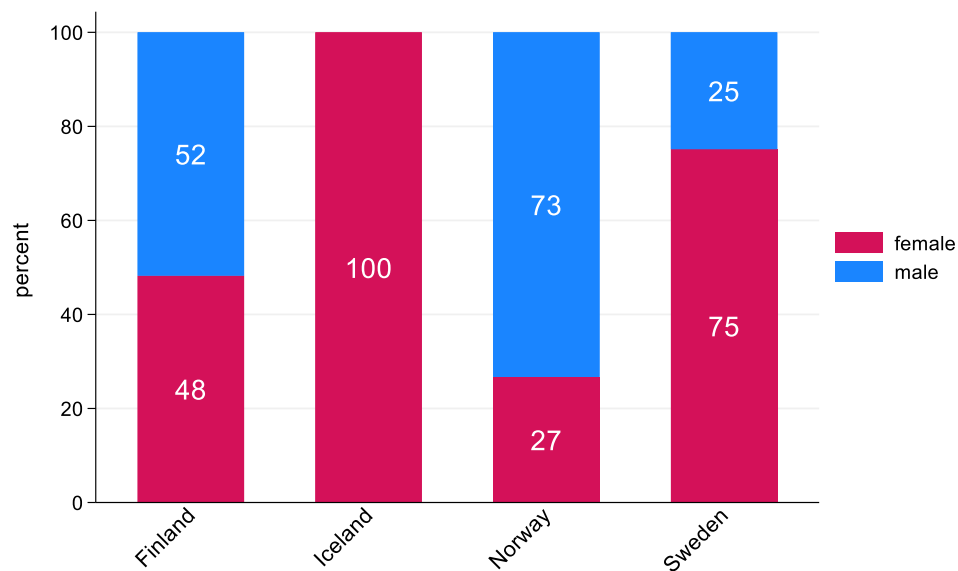


Table 6 displays data about the type of organisation, whether Arctic Sea Basin respondents work in a public institution, industry or in a non-governmental entity. It also includes information about the size of the organisation given by the total number of employees.

Table 6 Information on the organisation type and size among respondents

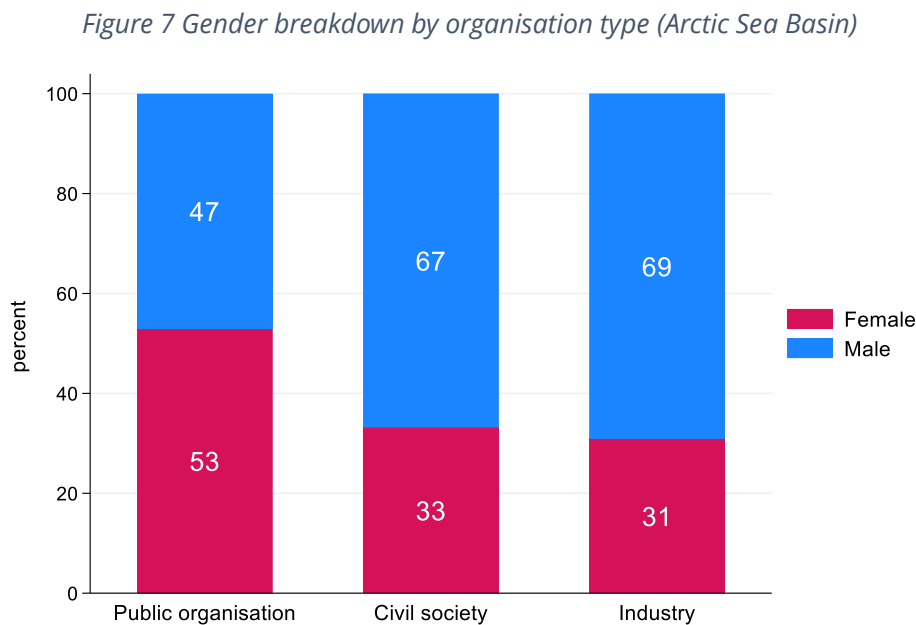
Type and Size of Organisation	
Type of Organisation	Percentage
Commercial State Company	<1%
Government Agency/ Department / Public Body (National)	33%
Government Agency/ Department/ Public Body (International, e.g. EU, OECD)	1%
Higher Education Institution	13%
Local / Regional Government	4%
Industry - Cluster/Network	12%
Industry - Micro Enterprise	0%
Industry - Small Medium Enterprise (SME)	3%
Industry - Multinational Company (MNC)	27%
Industry Representative Organisation	0%
Media & Communications	0%
Non-Government Organisation (NGO)	1%
Not For Profit	<1%
Port Authority	3%
Research Institute (Public and Private)	3%
Firm Size (total number of employees)	Percentage
< 10	4%
10 – 25	13%
26 – 50	6%
51 – 100	3%
101 – 200	3%
201 – 500	3%
501 – 1000	24%
> 1000	44%

In terms of the type of organisation, the largest portion of Arctic Sea Basin respondents work in Government Agency/ Department/ Public Body (National) (33%), multinational corporations (MNCs) (27%), Higher Education Institution (13%) and cluster/network (12%).

A **significant portion of the sample are employed in large organisations with over 1,000 employees (44%)** and in companies with 501-1000 employees (24%), denoting the typical size in Blue Economy organisations in the region.

Regarding the gender breakdown by type of organization, the results are depicted in Figure 7. A higher percentage of female respondents work in public organisations (53%), compared to the industry (31%) and civil society (33%) organisations.

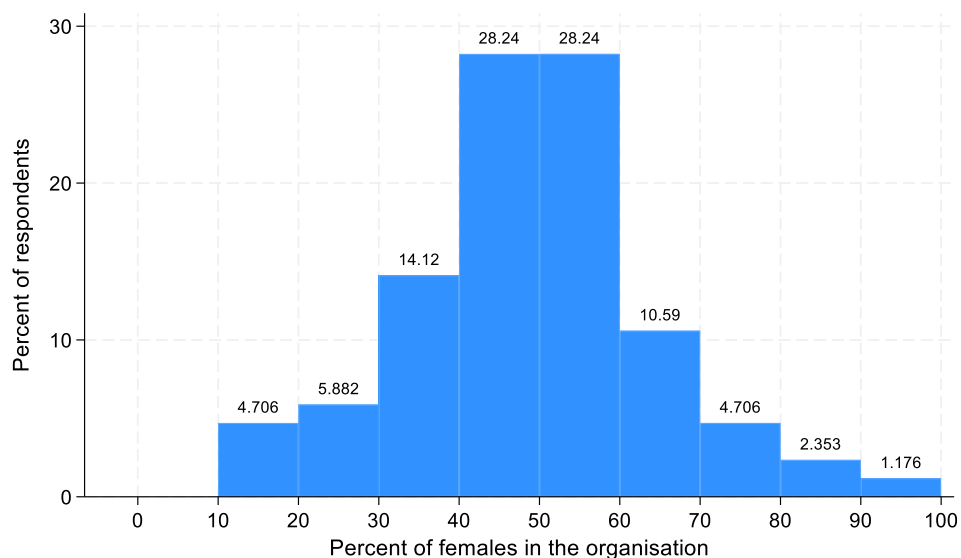
The industry category includes the respondents from the following types of organisations: Industry - Cluster/Network, Industry – micro enterprise, Industry - Small Medium Enterprise (SME), Industry - Multinational Company (MNC), Industry Representative Organisation.



The category 'Civil society' includes Media & Communications, Non-Government Organisation (NGO), Not for Profit and Research Institutes (Public and Private) are included under. The category public organisations includes the following types: Commercial State Company, Higher Education Institution, Government Agency/ Department / Public Body (National), Government Agency/ Department/ Public Body (International, e.g. EU, OECD), Local / Regional Government and Port Authority.

The respondents were also asked to indicate the approximate percentage of female employees in their organisation. Figure 8 presents these results.

Figure 8 Arctic Sea Basin responses to the WIN-BIG Survey question: “Approximately what percentage (0 – 100) of the persons employed are female?”<sup>9</sup>



About 56% of the respondents indicated that between 40% to 60% of the employees in their firm are female. About 14% of respondents answered that female employees constitute 30-40% and about 11% answered that the percentage of female workforce at their workplace is from 10 to 30%. Another 11% of respondents answered that about 60 to 70% of employees are female and about 8% chose a range between 70 to 100%.

<sup>9</sup> This histogram is based on the unweighted results.

## WORKING ARRANGEMENTS AND CULTURE

The wider literature on gender inequalities refers to the problem of underrepresentation of women in managerial and supervisory positions, especially in male-dominated sectors (Gallo and López, 2023; Macarie and Moldovan, 2012). Studies highlight that flexible work hours and work-life balance are important for females to be able to reach senior positions (Carrasco-Santos et al., 2020; Carvalho, 2018). Furthermore, studies note that gender inequalities can be exacerbated due to the effect of taking carer's leave on the promotion to senior positions and on subsequent wage increases (Evertsson, 2016; Matysiak and Cukrowska-Torzewska, 2021).

To investigate some of these issues, this section presents the Arctic Sea Basin survey responses related to the employment level of the respondents, working arrangements and organisational culture surrounding gender equality.

Table 7 outlines data on respondents' employment characteristics related to the position, contract, and years of experience in current employment.

*Table 7 Employment characteristics of respondents (Arctic Sea Basin respondents)*

Employment Characteristics of Respondents	
Employment level	Percentage
Executive or senior management	13%
Middle management	12%
First-level management	17%
Intermediate or experienced employee	52%
Entry-level employee	6%
Employment situation	Percentage
Full-time permanent	65%
Full-time contract	10%
Part-time permanent	21%
Part-time contract	<1%
Seasonal	3%
Years in current employment	Percentage
Less than 1 year	22%
1-5 years	25%

6-10 years	2%
11-15 years	11%
More than 15 years	40%
<b>Taken periods of leave during current employment</b>	<b>Percentage</b>
Yes	14%
No	86%
Prefer not to say	0%

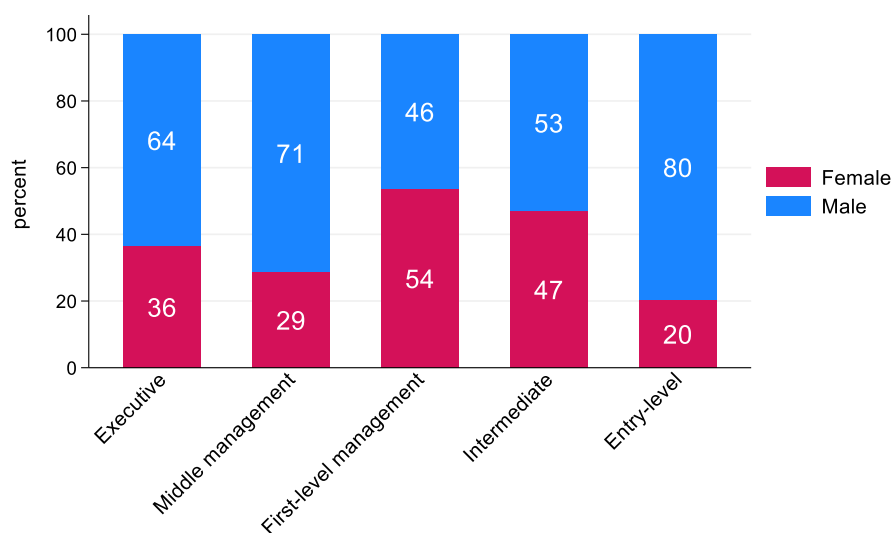
**Slightly more than half of respondents (52%) of Arctic Sea Basin occupy intermediate level positions**, while 17% of respondents work in middle management. Entry-level employees present the smallest sample (6% of survey respondents).

In total, 75% of respondents work full-time, in either permanent (65%) or contract (10%) positions. Half of respondents (51%) have worked at their current employers for more than 11 years and 22% of respondents have been employed for less than one year at their current employment. About 25% of respondents worked from 1 to 5 years.

In addition, the survey elicited replies regarding periods of extended leave (such as maternity, paternity or carer's leave) and 14% of respondents had taken a period of extended leave at their current employment.

Figure 9 shows the gender of the respondents across the employment levels.

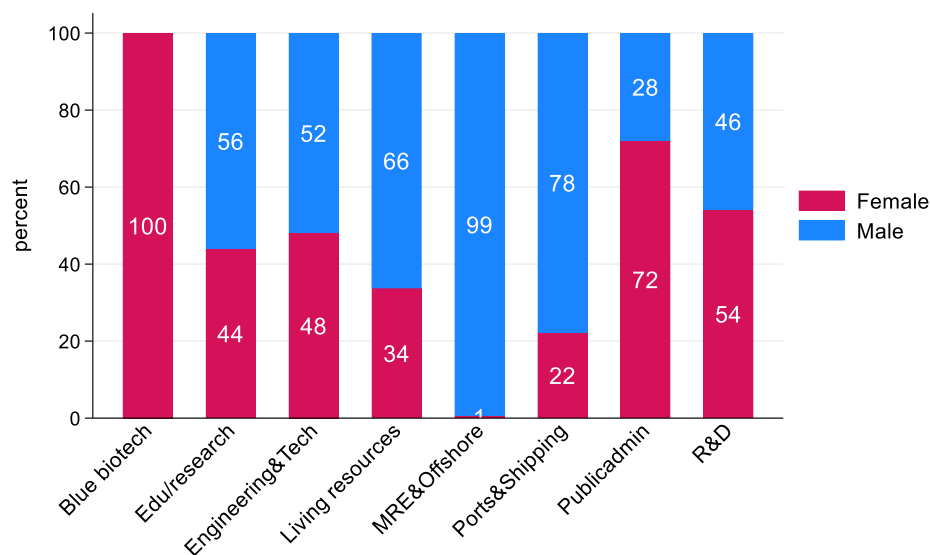
*Figure 9 Arctic Sea Basin Respondents' Gender distribution across the employment level*





Results show that a lower percentage of female respondents work in executive (36%) and middle management (29%) positions.

Figure 10 Arctic Sea Basin Respondents' Gender breakdown by sector



As shown in Figure 10, a higher percentage of female respondents are in R&D related to the marine (54%) and lower number of females is in living resources (34%). The sample of ports and shipping, engineering and technology, marine renewable energy and public administration is too small to be used as relevant data.

Figure 11 Arctic Sea Basin Respondents' Gender distribution according to the years spent in current employment

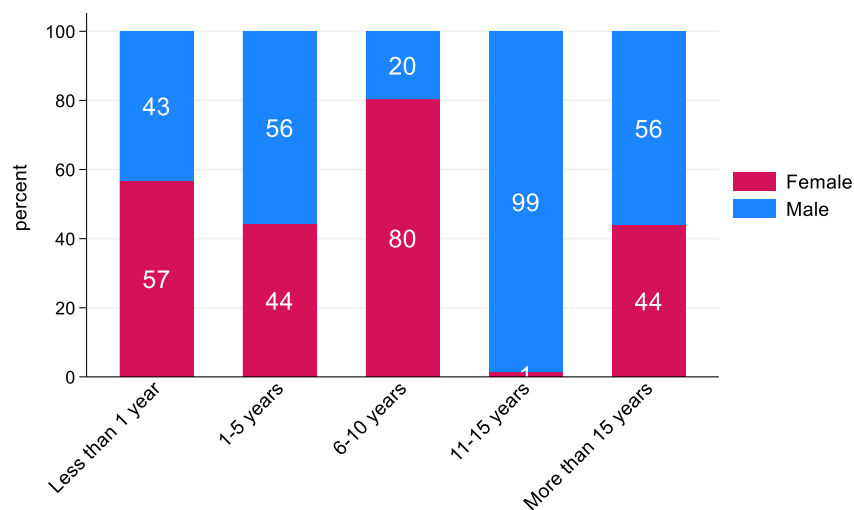
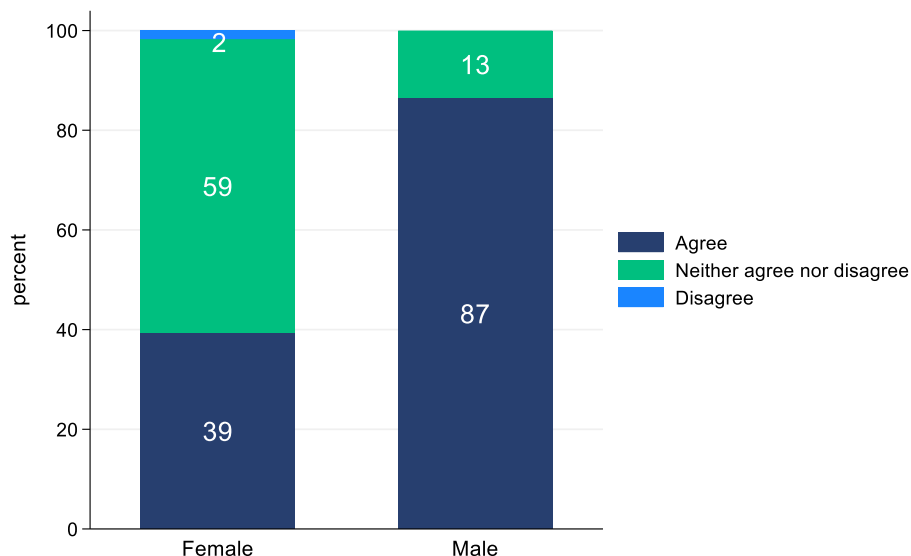


Figure 11 shows that a higher percentage of female respondents have worked in their current company for 6-10 years (80%) and for less than 1 year (57%). The sample of respondents who worked for 11 to 15 years is small

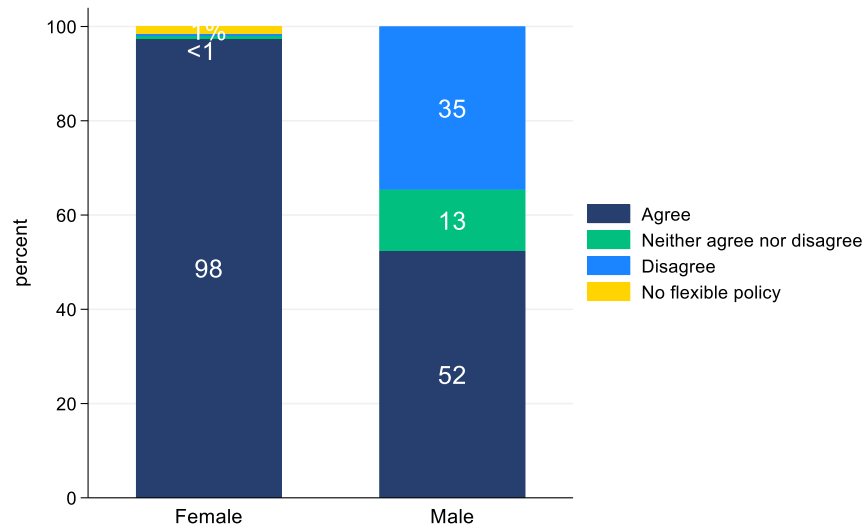
Figure 12 Arctic Sea Basin responses to the WIN-BIG Survey question: “It is possible to strike an appropriate balance between my work and home life”



Overall, **66% of respondents indicate that they can strike an appropriate work-life balance.** However, much lower number of females (39%) agreed with the statement, compared to 87% of men (Figure 12).

Flexible working arrangements with fully remote or hybrid work options have become more common since the Covid-19 pandemic, to support work-life balance and operational flexibility. The WIN-BIG survey investigated whether these are also present in the EU Blue Economy. Figure 13 depicts responses regarding the accessibility to these flexible working arrangements.

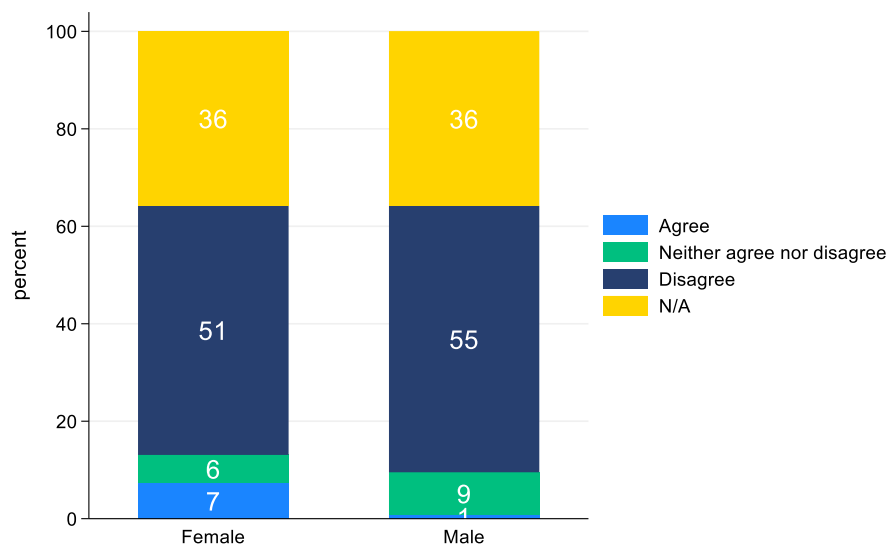
Figure 13 Arctic Sea Basin responses to the WIN-BIG Survey question: “At my work, there are flexible working arrangements available that are suitable to my needs.”



Interestingly, **most of female respondent (98% female versus 52% male) confirmed that there are flexible working arrangements available** at their work. A significant number of male respondents (35%) disagreed with the statement.

WIN-BIG also investigated the perceived impact of carer's leave periods on career progression. Figure 14 highlights these results, illustrating clear differences between female and male responses.

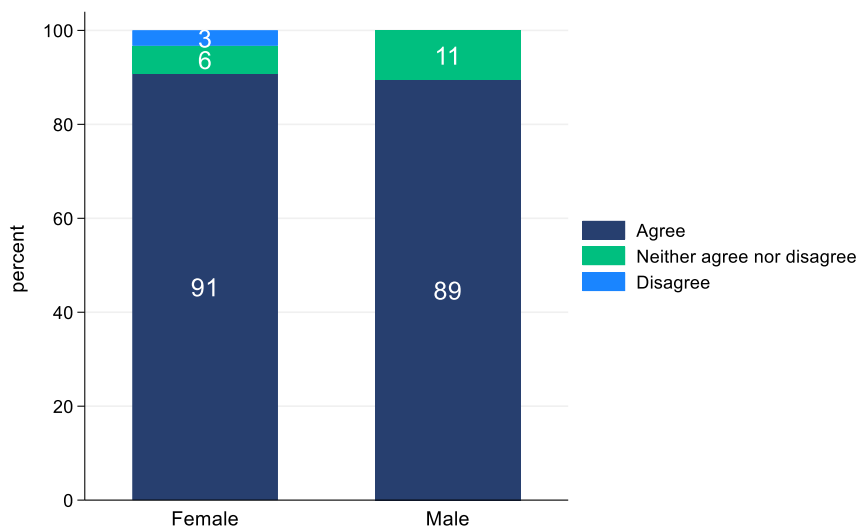
Figure 14 Arctic Sea Basin responses to the WIN-BIG Survey question: “If you have taken carer's leave do you believe it has had a negative impact on your career progression?”



A large proportion of male and female respondents have not taken carer's leave. Of respondents who have, only 7% of females and 1% of male respondents believe it has negatively impacted their career progression, which is positive. Additionally, 9% of male respondents and 6% of female respondents neither agree nor disagree with this statement, which suggests that they may not know the impacts of the carer's leave on their career progression (Figure 14).

When investigating the **prevailing Blue Economy organisational culture within the Arctic Sea Basin the respondents report mainly positive views** on the inclusiveness of their organisations (shown in Figure 15).

Figure 15 Arctic Sea Basin responses to the WIN-BIG Survey question: "The prevailing culture and atmosphere in my organisation/firm is inclusive and friendly to all."



Most of the respondents (91% female and 89% male) report higher levels of agreement regarding the inclusivity of their workplace. A higher percentage of males (11% male and 6% female) chose neither agree nor disagree option, while among female respondents 3% disagreed about the inclusive culture at their workplace.

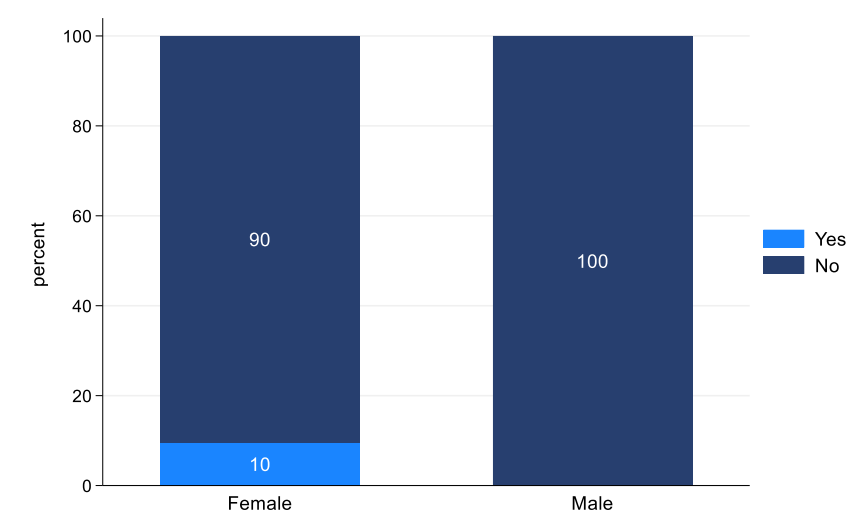
# GENDER CULTURE OF THE ORGANISATION

The WIN-BIG survey also assessed the respondents' perceived experiences of gender discrimination and harassment in the industry and sector. The perception of gender discrimination in the workplace is described as a perception of being deprived of opportunities at an employee's workplace and is distinct from sexual harassment (del Carmen Triana et al., 2019). Discrimination refers to any systematic unfair treatment of an individual or group based on personal or social circumstances and characteristics (Ramos Martín, 2014). In addition, studies refer to mobbing, bullying and harassment that need to be tackled at the societal and institutional level as these can negatively affect individual's work performance, and may result in women quitting their jobs (Dogg et al., 2022; Loriol et al., 2020).

Gender-based harassment in maritime transport and seagoing oceanography has also been acknowledged as an issue that acts as a barrier to women's participation in these industries (Dragomir, 2019; European Parliament, 2023; Boström and Österman, 2022; Legg et al., 2023). Studies note that through understanding the value and meaning of diversity, equity and inclusion, leaders of organisations can create an environment where all people feel recognized, have access to resources and opportunities and can create new innovations and solutions (Ashikali and Groeneveld, 2015; Coleman and Taylor, 2023).

The results obtained about the perception of gender discrimination, experience of harassment and leadership commitment to diversity, equity and inclusion are depicted in the next figures.

Figure 16 Arctic Sea Basin responses to the WIN-BIG Survey question: "I have experienced gender discrimination within my organisation/firm."



As illustrated in Figure 16, **only female respondents (10%) reported that they have experienced gender discrimination within their organisation** suggesting that gender inequality is still an issue in EU Blue Economy organisational culture and practices.

Figure 17 also shows a much higher percentage of female employees having witnessed gender discrimination compared to male respondents (14% female versus 8% male).

Figure 17 Arctic Sea Basin responses to the WIN-BIG Survey question: “I have witnessed gender discrimination within my organisation/firm.”

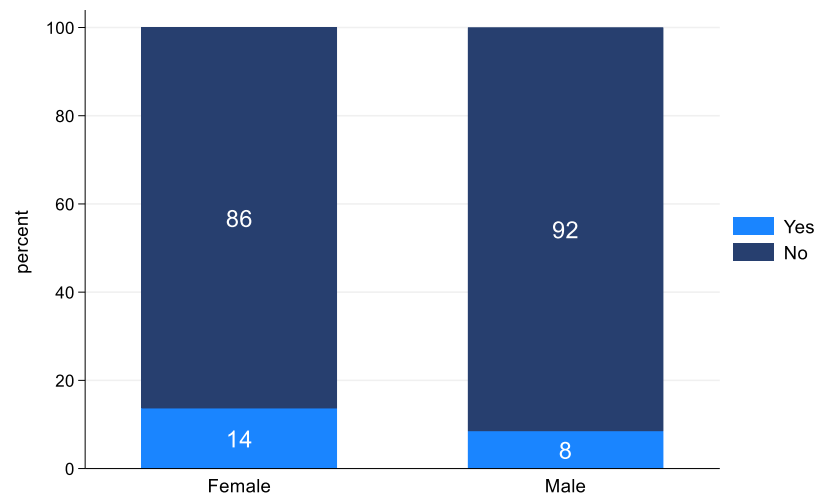


Table 8 summarises the proportion of respondents who have suffered some form of harassment either in their organisation or in their industry in general.

Table 8 Arctic Sea Basin responses to the WIN-BIG Survey question: “Experience of harassment at organisation and industry levels”

	Experience of Harassment		
	Yes <sup>10</sup>	% Female	% Male
Have you suffered any of the following forms of harassment in your firm/organisation?	49%	52%	47%
Have you suffered any of the following forms of harassment in your industry more generally? <sup>11</sup>	70%	89%	60%

<sup>10</sup> Respondents could choose the following forms of harassment (tick all that are relevant): Offensive jokes or slurs, Physical assaults or threats, sexual assaults or threats, intimidation, insults or put-downs, stalking, other (please state).

<sup>11</sup> the question on forms of harassment in industry more generally was introduced in the survey 3 months later from the launch. Therefore, the sample for this question is smaller and equals to 33.

A relatively high proportion of Arctic Sea Basin respondents have suffered some form of harassment. Both female and male respondents reported some form of harassment at organisation level (52% female versus 47% male). Although the sample regarding harassment in the industry in general comprises of only 33 responses, **quite a high percentage (70%) of respondents reported incidents of harassment**. Majority of females (89%) and more than half of male respondents (60%) said that they have experience harassment at industry level.

Figure 18 presents the breakdown of the proportion of the respondents who answered that they have experienced harassment at organisation level. **The highest proportion of harassment at organisational level can be observed in R&D (35%),** education and research (18%), living resources (14%) and blue biotechnology (22%). The sample of public administration, ports and shipping, marine renewable energy and engineering and technology is small to be considered significant for this analysis.

Figure 18 Arctic Sea Basin responses to the WIN-BIG Survey question: “Experience of harassment at organisation level” broken down by sector

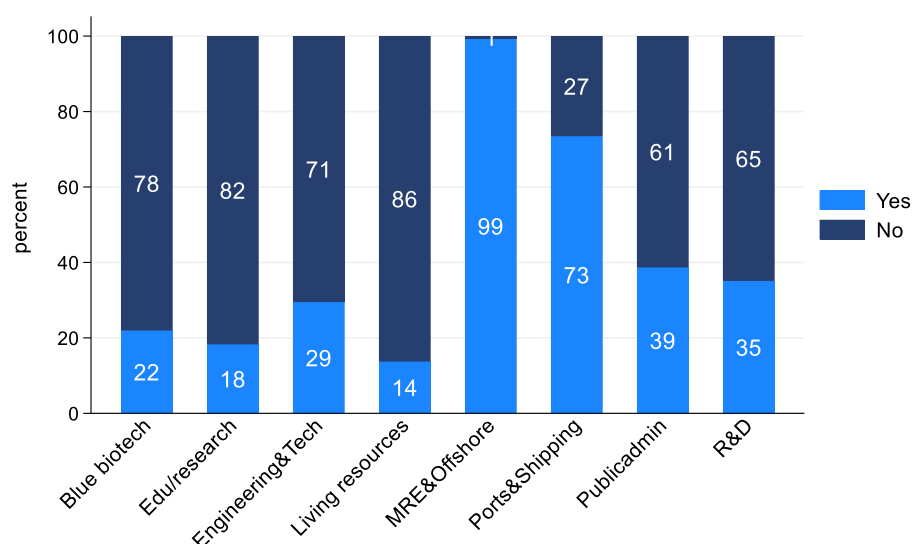
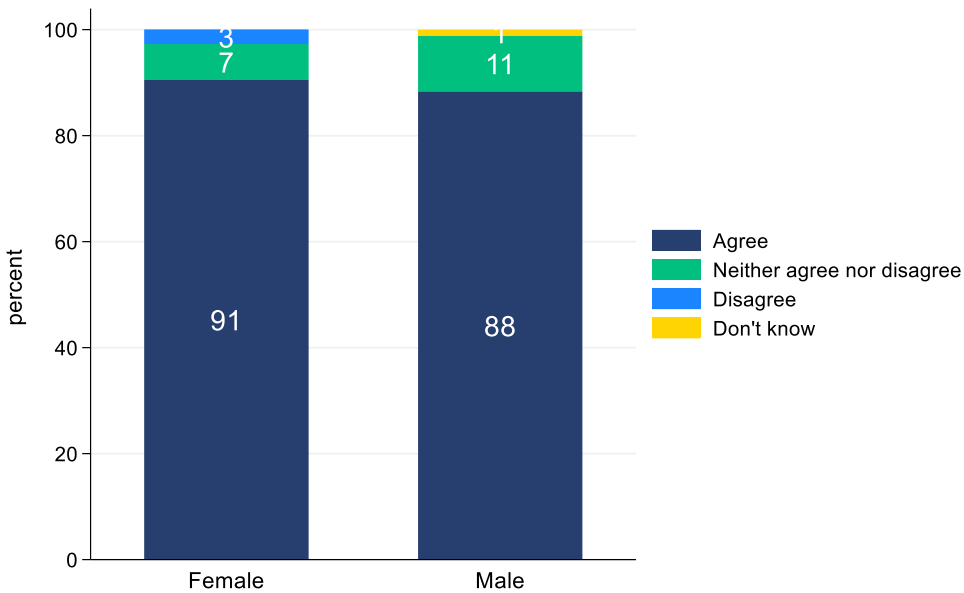


Figure 19 displays Arctic Sea Basin respondents’ views on internal leadership commitments to gender equality, diversity and inclusion (EDI), within their organisation. Generally, both male and female respondents report that leadership within their organisation is committed to gender equality with 3% of female respondents disagreeing with this statement. There is small difference in the positive responses among female and male respondents (91% female and 88% male). The neutral response of neither agree nor disagree is higher among male respondents (11% male vs 7% female).

Figure 19 Arctic Sea Basin responses to the WIN-BIG Survey question: “Leadership in my organisation/firm is committed to Gender Equality, Diversity and Inclusion”





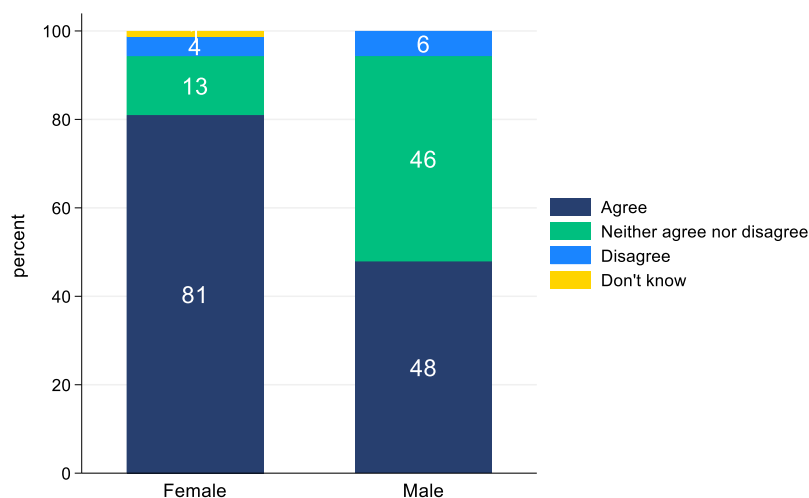
## PERCEPTION OF OPPORTUNITIES

In this section the results about the perception of available opportunities at respondents' workplace are presented. The survey included questions on the availability of career growth opportunities, such as access to training and mentorship.

Previous studies note that training and mentorship programmes fill the gap between knowledge and action and play a positive role on career outcomes (Martini and Cavenago, 2016; Wikström et al., 2023). Workplace training is also acknowledged as a lifelong learning process that realises the potential for skills development, especially considering the need of new skills due to technology change and digitalisation (Lucas et al., 2018; Tikkanen et al., 2018). The existing literature also refers to the importance of training and mentorship to ensure gender equality. First, studies note that women face multiple obstacles such as lack of networks, support from colleagues, non-transparent rules of promotion and recruitment and work-family conflicts, and thus training and mentoring programs are important to close the skills gap between men and women (Górska and Burlakova, 2025; Holzinger et al., 2019; Roosmaa and Saar, 2023). Second, the literature argues that in certain sectors of economy, for example in STEM, women face stereotypes and, thus mentorship programs are important as they empower women and create an environment where women are given equal opportunity to men to develop as leaders (Barabino *et al.*, 2020). Shellock *et al.* (2022) find that encouragement and support from superiors, mentorship, training and coaching are important enablers to overcome gendered barriers, such as lack of trust, leading to the acceptance of women leaders. Mentoring programs are important, especially in masculine fields, as such programs can guide and train all the across—gender workforce to accept women to senior positions or on corporate boards (Varriale et al., 2016). Finally, the literature from the EU blue economy argues that to bridge the gender gap in sectors such as marine renewable energy and maritime transport that is in its transition towards technological advancements and automation, training is necessary in energy-related areas and technical skills (Clancy, and Feenstra, 2019; Di Vaio, 2023; Kim et al, 2019).

Given these factors, this section of the report documents respondents' views related to training, mentorship and career opportunities. Figure 20 shows the survey results for the broad question on access to the opportunities.

Figure 20 Arctic Sea Basin responses to the WIN-BIG Survey question: “I have access to the opportunities I need to support my career aspirations.”



More than half of respondents **(62%) provided a positive answer to considering having access to opportunities for their career aspirations.** The percentage of positive responses is much higher among female respondents (81% female vs. 48% male).

Across the blue economy sectors (see Figure 21), **it is in R&D that there is a perceived lower level of opportunities to progress.** 11% of respondents in R&D disagreed about the access to the required opportunities for career aspirations. In living resources 8% and in research and education (third level) 2% disagreed with the statement. Noteworthy, that a 38% of respondents in living resources provided neutral response. Neutral response is also observed in education and research (third level) (18%) and in blue biotechnology (12%). The sample of respondents in public administration, ports and shipping, marine renewable energy and engineering and technology is small to be considered relevant for this analysis.

Figure 21 Arctic Sea Basin responses to the WIN-BIG Survey question: "I have access to the opportunities I need to support my career aspirations: broken down by sectors."

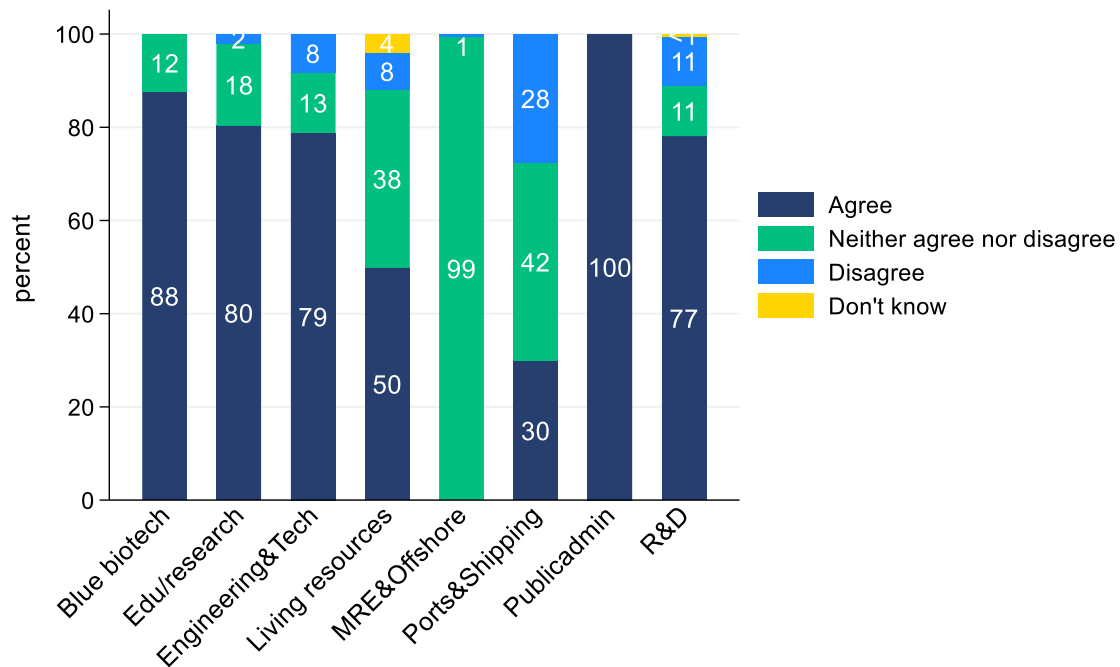
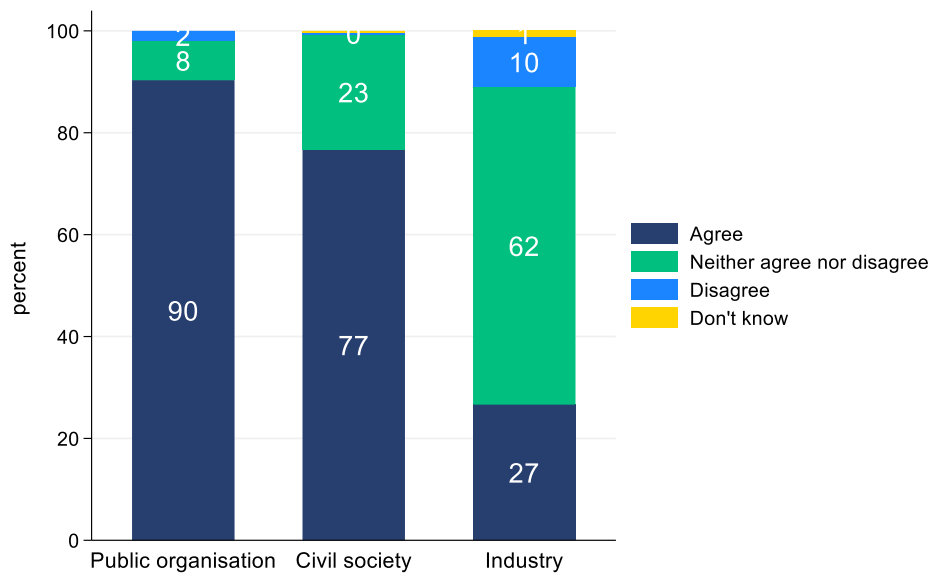


Figure 22 illustrates the availability of access to opportunities across the types of organisations.

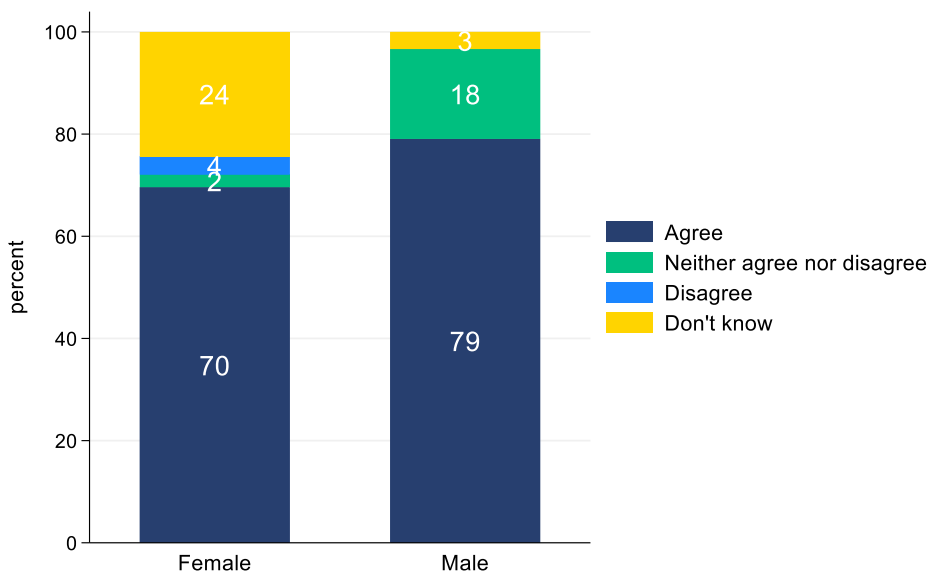
Figure 22 Arctic Sea Basin responses to the WIN-BIG Survey question: "I have access to the opportunities I need to support my career aspirations: breakdown of responses across types of organisation."



The lowest percentage of positive responses is among employees working in industry (27%). A higher percentage of respondents chose a neutral response in industry (62%) and another 10% disagreed with the statement about availability of opportunities. Respondents in civil society organisation 23% of respondent chose the neutral response.

WIN-BIG also investigated whether the recruitment processes were perceived to be fair and transparent within organisations.

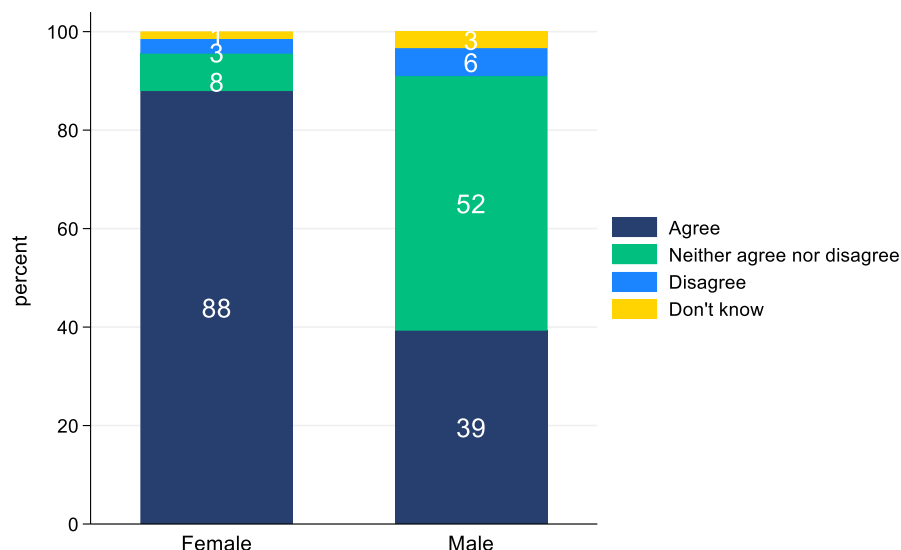
Figure 23 Arctic Sea Basin responses to the WIN-BIG Survey question: “The process of applying for an internal vacancy is fair and transparent?”



As shown in Figure 23, the majority of respondents (75%) agreed with the statement “The process of applying for an internal vacancy is fair and transparent”. A slightly lower percentage of females provided positive response (70% female and 79% male), 4% of female respondents also disagreed with the statement and 24% answered that they do not know whether the internal vacancy application is fair and transparent at their workplace. While male respondents did not choose a negative answer, 18% of males chose the ‘neither agree nor disagree’ option.

Next, we investigated whether there was training and mentoring available for the respondents.

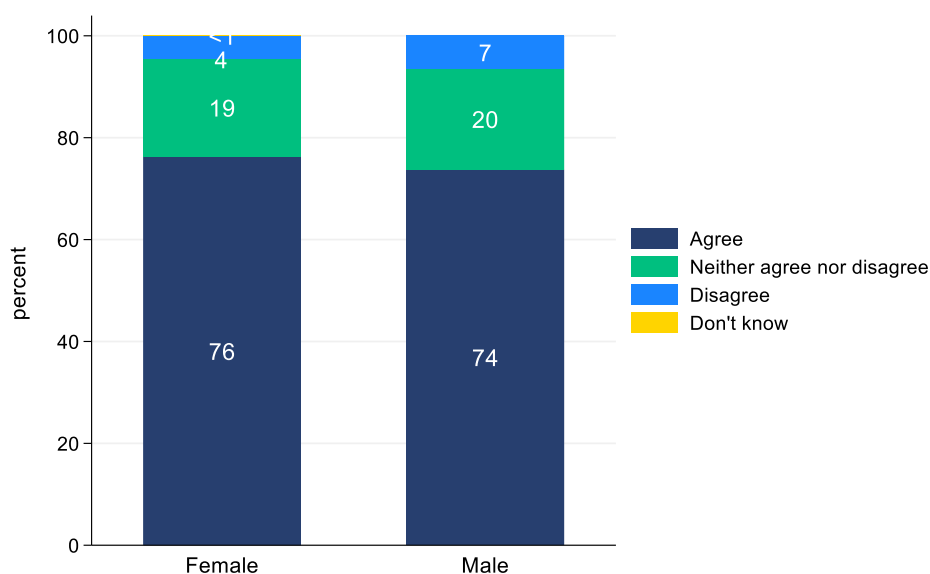
Figure 24 Arctic Sea Basin responses to the WIN-BIG Survey question: “I have access to the training I need to support my career aspirations.”



In total, **60% of respondents agree with the statement “I have access to the training I need to support my career aspirations”** (Figure 24). A higher percentage of female respondents agreed with the statement (88% female vs. 39% male). More than half of male respondents chose “neither agree nor disagree option”.

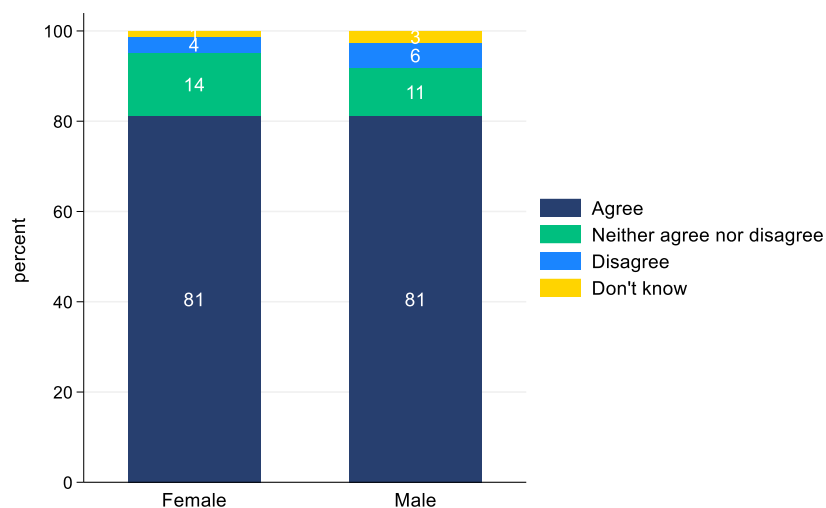
In what regards mentoring, Figure 25 presents the results regarding the assertion, “I have access to the mentoring (formal or informal) I need to support my career aspiration”. The majority of respondents (75%) affirmed this view, with almost no gender differences.

Figure 25 Arctic Sea Basin responses to the WIN-BIG Survey question: “I have access to the mentoring (formal or informal) I need to support my career aspirations.”



Next, a question was asked to investigate if respondents felt management and direct supervisors were supportive of career aspirations to respondents.

Figure 26 Arctic Sea Basin responses to the WIN-BIG Survey question: "My direct supervisor supports my career aspirations."



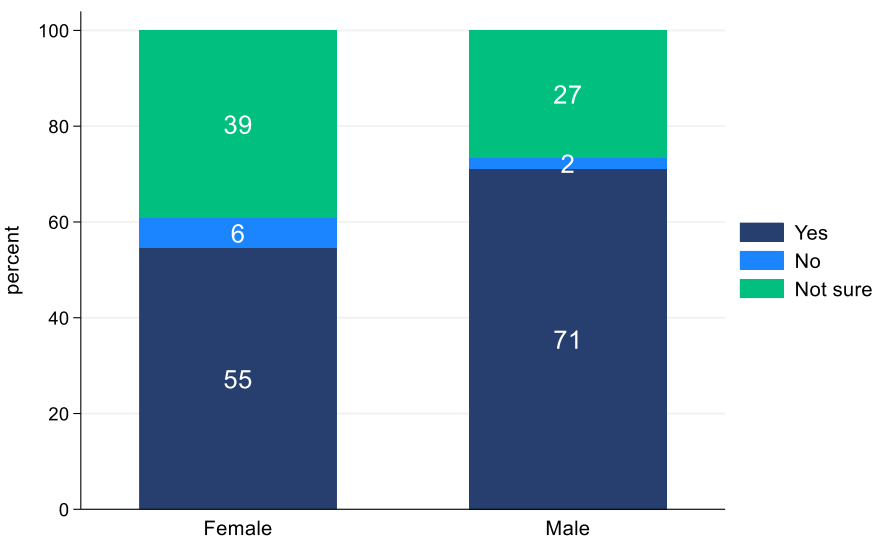
As shown in Figure 26, the majority of respondents (81%) reported agreement with the statement "My direct supervisor supports my career aspirations". There is almost no difference of results across the male and female respondents.

# GENDER BIAS POLICIES AND FRAMEWORKS IN THE WORKFORCE

To identify the prevalence and use of policies that might support gender equality, the survey also asked respondents about the existence of formal organization/firm policies and rules for gender balance in hiring and career promotion, or the existence of internal gender plans at their workplaces. Gender parity laws on Boards of Directors, incorporation of gender mainstreaming into policies, policies on work-life balance are recognized factors that can promote gender equality (Alonso Gallo and Gutiérrez López, 2023; Casey et al., 2011).

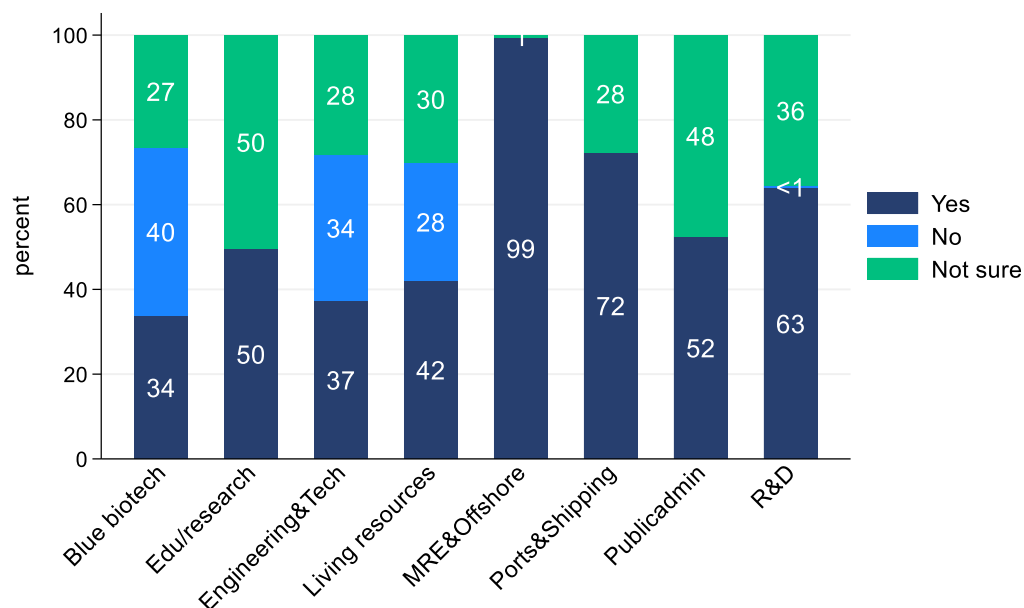
Figure 27 shows that regarding formal strategies or policies related to gender balance in hiring, 64% of the total respondents answered positively, 4% negatively and 32% were not sure.

Figure 27 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation has a strategy or formal policy related to gender balance in hiring processes?”



There is a perception biased difference in the responses among female and male respondents. Lower percentage of females answered that their organisation has a policy/strategy related to gender balance in hiring processes (55% female vs. 71% male).

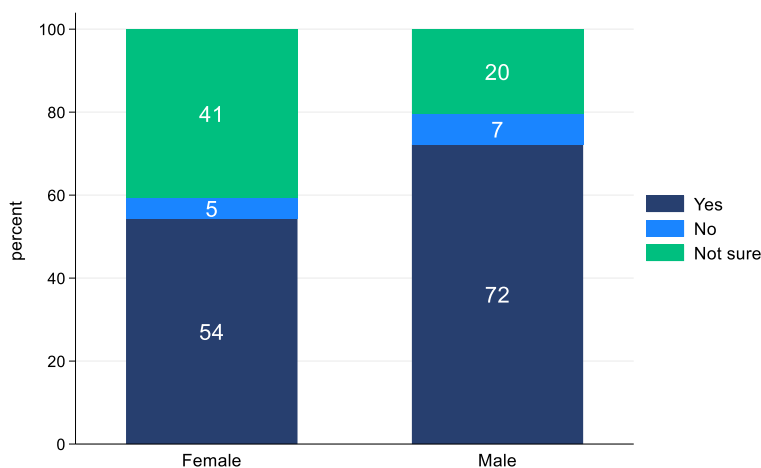
Figure 28 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation has a strategy or formal policy related to gender balance in hiring processes? (Broken down by sector)”



Across the blue economy sectors (see Figure 28), **a high percentage of employees working in blue biotechnology (40%) and living resources (28%) answered that their organisation does not have a policy related to gender balance in hiring.** Additionally, half of respondents in research and education (third level) and 36% in R&D chose a neutral response. The sample in public administration, ports and shipping, marine renewable energy and engineering and technology is too small to be relevant.

On the other hand, when confronted with the question of existence of formal gender policies/plan in the respondents' organisations results were more positive (Figure 29).

Figure 29 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation have a formal gender policy/plan?”





In total, only 6% of respondents reported that their organisation does not have a formal gender policy or plan but 30% were not sure about that. There is a noticeable variation in responses by gender: slightly more than half of female respondents (54%) confirmed that their organisation has a gender policy, compared to 72% of male respondents. Two possible explanations can be considered. First, men may be less aware of existing gender inequalities and therefore assume that appropriate gender policies are in place. Second, men might perceive that women are more favourably treated than how they actually are in reality.

As shown in Figure 30, across the blue economy industries, 40% of respondents in blue biotechnology and 15% in living resources noted that they do not have gender policy or plan. A high percentage of “not sure” responses was among respondents in research and education (57%) and living resources (51%). The sample in public administration, ports and shipping, marine renewable energy and engineering and technology is too small to be considered relevant for this analysis.

Figure 30 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation have a formal gender policy/plan? (broken down by sector)”

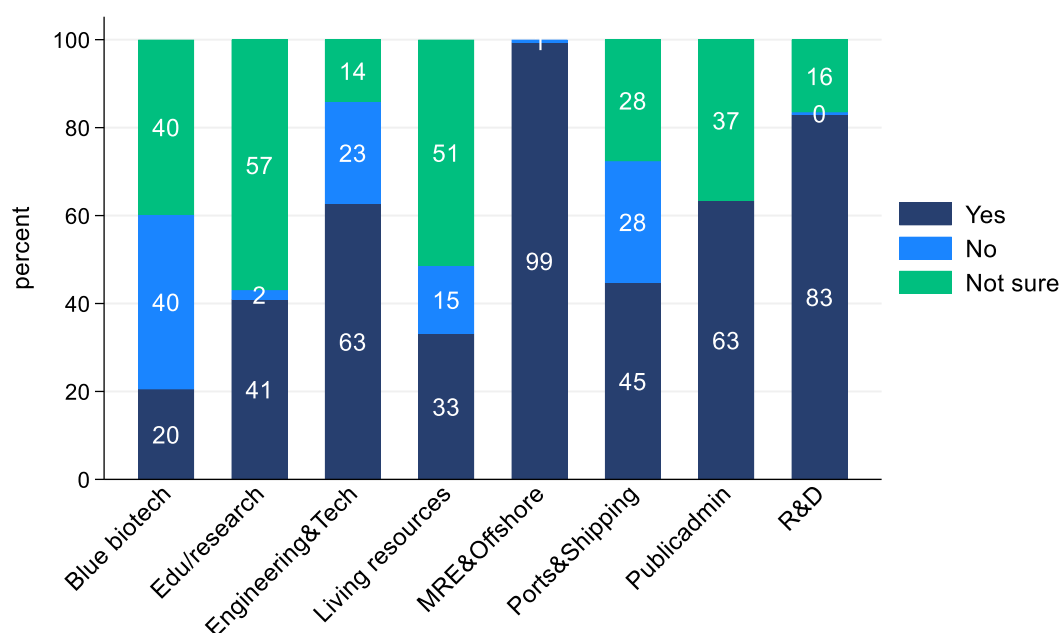


Figure 31 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation formally or informally support the promotion and advancement of women?”

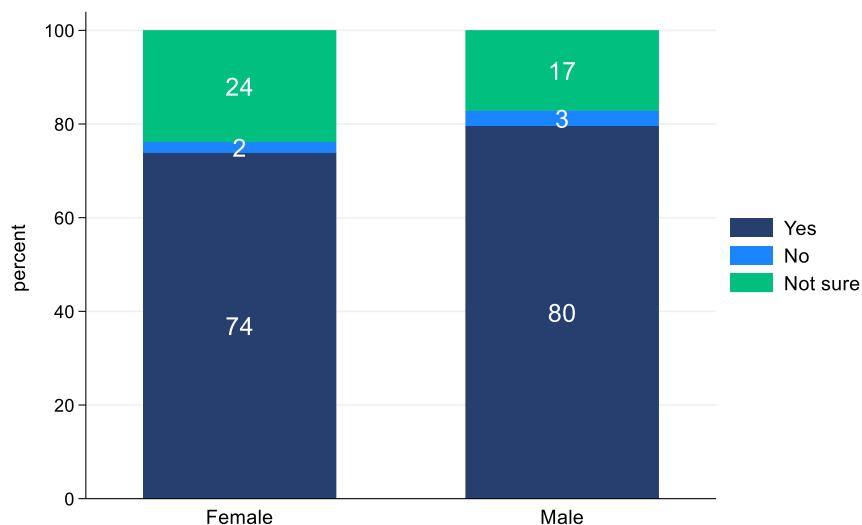
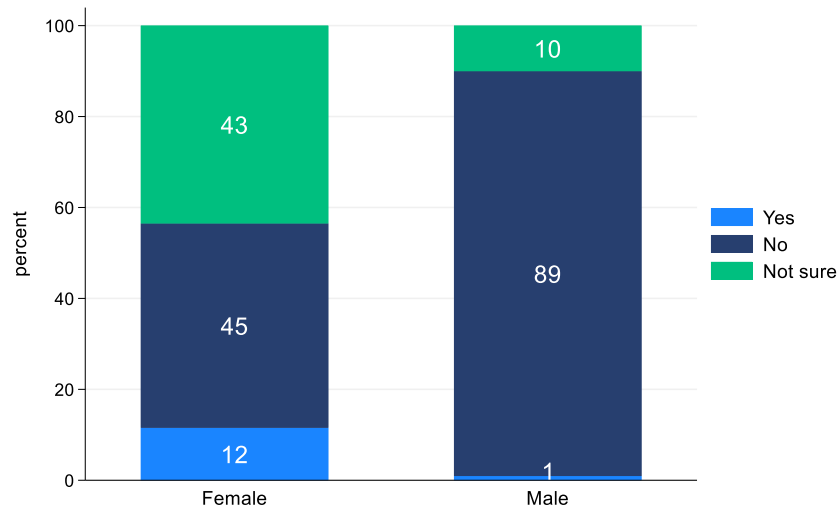


Figure 31 shows that slightly lower percentage of female respondents (74% female versus 80% male) confirmed that their firm formally or informally supports the advancement of women.

## PERCEPTION OF BARRIERS

Similarly to the analysis of perceived opportunities, the WIN-BIG survey also asked respondents about their perception of barriers to career progression within their organisations/firms and across industries and sectors. This section also presents the results on whether the respondents' companies have female managers and role models. According to Turesky and Warner (2020) companies with female-managers have greater gender sensitivity, more flexible work-life benefits and perceived equal opportunities. An increased share of female top managers is also associated with subsequent increases in the share of women in midlevel management positions (Kurtulus and Tomaskovic-Devey, 2012). Studies also find that female role models reduce stereotype threat and positively impact women's career-related engagement (Cortland and Kinias, 2019; Sealy and Singh, 2010).

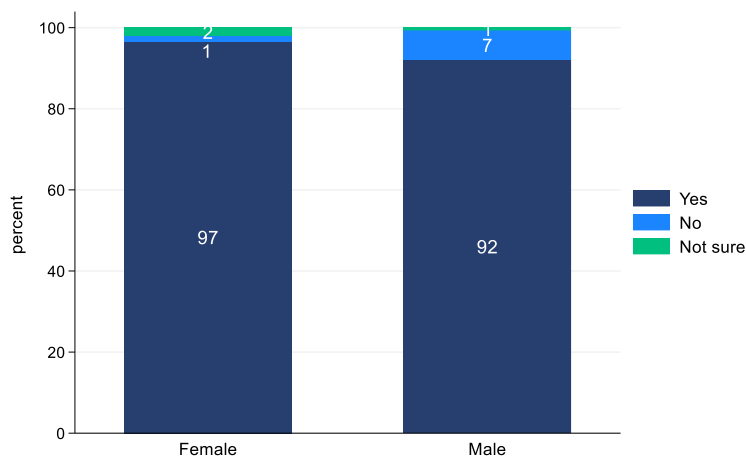
Figure 32 Arctic Sea Basin responses to the WIN-BIG Survey question: “In your opinion, do barriers exist preventing women being promoted to senior positions in your firm/organisation?”



As shown in Figure 32, **around 12% of female respondents and only 1% of male respondents answered that there are barriers preventing women being promoted to senior positions.** A much higher percentage of females also were unsure about the existence of barriers (43% female vs. 10% male).

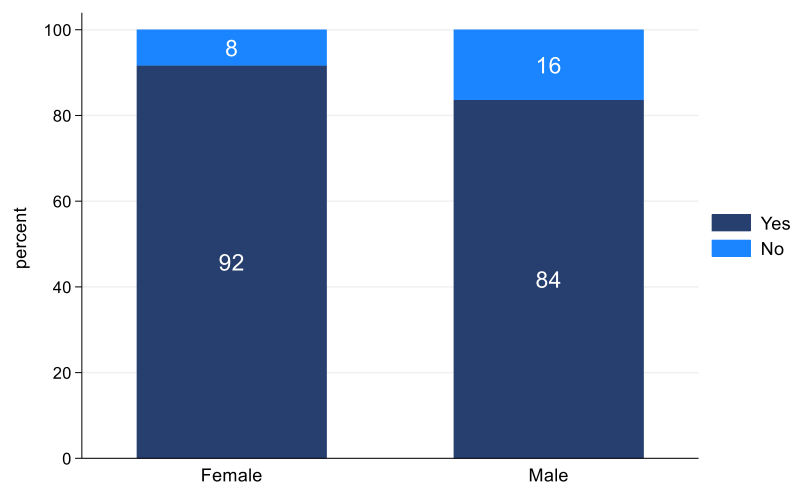
When assessed from a different perspective, on whether respondents’ organisations include women in managerial positions, approximately, **94% of respondents mentioned that they have a woman manager in their organisations** (with almost no gender difference in responses). Figure 33 illustrates this result.

Figure 33 Arctic Sea Basin responses to the WIN-BIG Survey question: “Do you have any women managers in the firm/organisation?”



This is an interesting result, given that women are underrepresented in certain blue economy industries, especially at senior levels.

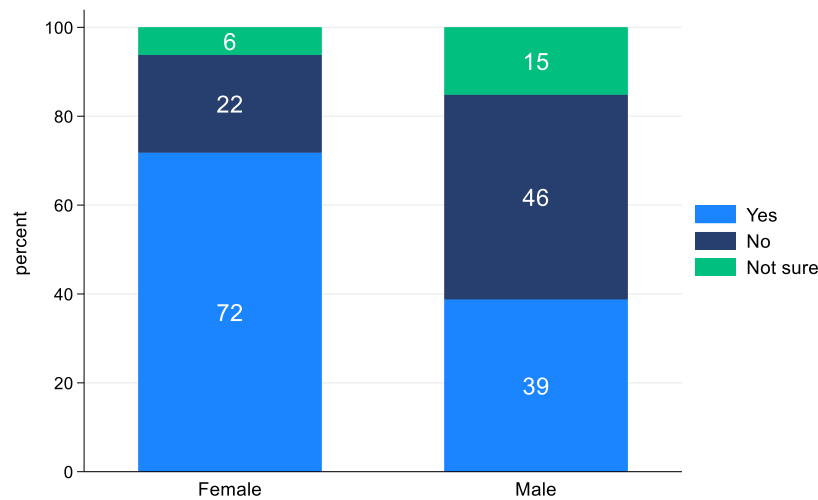
Figure 34 Arctic Sea Basin responses to the WIN-BIG Survey question: “Do you personally have any women role models in the firm/organisation?”



Compared to the question on female managers, there is a slightly higher percentage of negative responses is observable when it comes to the presence of female role models across organisations (Figure 34). In total, 87% of respondents answered that they have a female role model at their workplace. A higher number of females said that they have women role models at their workplace (92% female vs. 84% male).

WIN-BIG investigated whether the social structures in place in each member state are perceived to impact the progress of gender equality.

Figure 35 Arctic Sea Basin responses to the WIN-BIG Survey question: “Does the social structures in the country where your firm is based (the norms/patterns of relations between family, religion, economic, political and education institutions of the society) impact on the achievement of gender equality in your industry?”



More than half (54%) of respondents believe that social structures in the country where their firm is based (the norms and patterns of relations between family, religion, economic, political and education institutions of the society) impact the achievement of gender equality in their industry. Of note, a higher percentage of female respondents indicated that social structures impact gender equality: 72% of women versus 39% of men. This variation suggests that women may perceive that those societal norms have a greater impact in shaping gender inequalities.

# FEMALE PERCEPTIONS OF GENDER INEQUALITIES

In this section of the survey, female only respondents were invited to respond to questions related to the gender pay gap, their perceptions of whether they are treated equally to men in the workplace and whether they have the same promotion opportunities as men. Equal treatment at work, equal pay and opportunities are fundamental principles of EU law (Guerrero Padrón et al., 2023). Most EU countries prohibit gender discrimination by law and have enacted specific equal treatment legislation (Böök, 2021). Nevertheless, studies note that the gender wage gap still remains a problem (Hedija, 2017; Lausi et al., 2021; Segovia-Pérez, 2019, Landmesser et al., 2019).

Figure 36 Arctic Sea Basin responses to the WIN-BIG Survey question: “Do you feel you are treated the same as men in your workplace?”. Female responses only

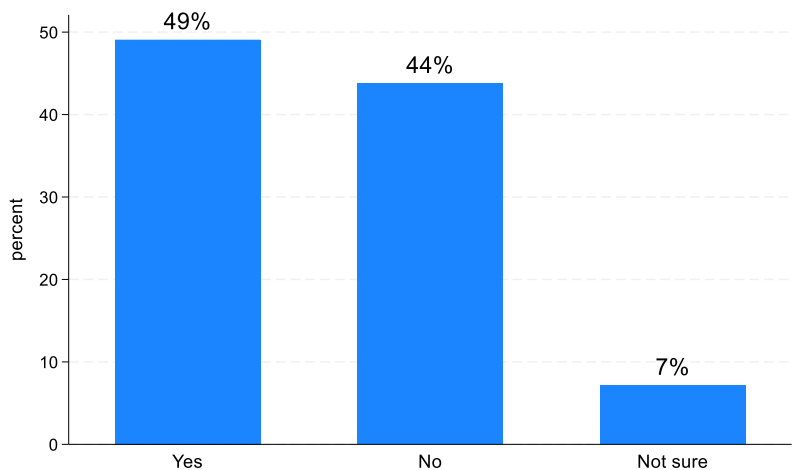


Figure 36 shows female respondent perceptions of whether they feel they are treated the same as men in their workplace. In total, **44% of female respondents reported that they do not feel (27%) or are unsure (7%) they received the same treatment as their male colleagues** in the workplace.

Figure 37 Arctic Sea Basin responses to the WIN-BIG Survey question: "If you are treated differently, how often does this happen?". Female responses only

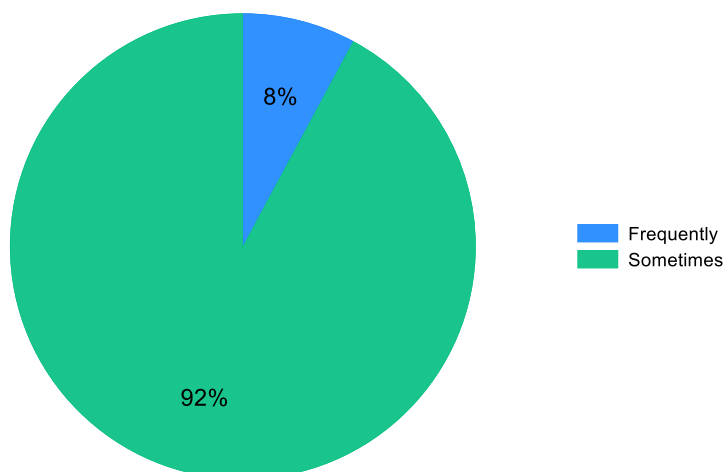


Figure 37 is an extension of the question regarding the perception of being treated the same as men. This question was not mandatory and includes a sample of 23 responses (around 24% of total Arctic sample). It illustrates the frequency with which women perceive being treated differently: 92% of the sample reported experiencing occasional unequal treatment, while 8% of female respondents in the sample expressed that it occurs frequently.

Figure 38 Arctic Sea Basin responses to the WIN-BIG Survey question: "In comparison with your male counterparts do you feel that you have more, less, or equal promotion opportunities in your industry?". Female responses only

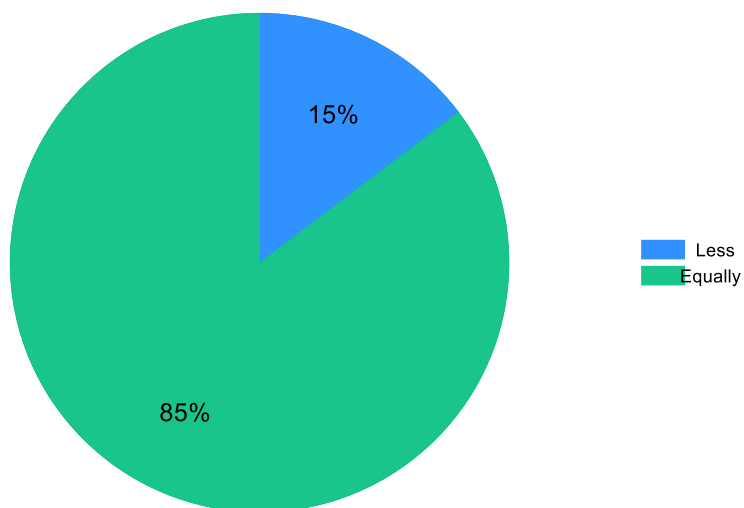
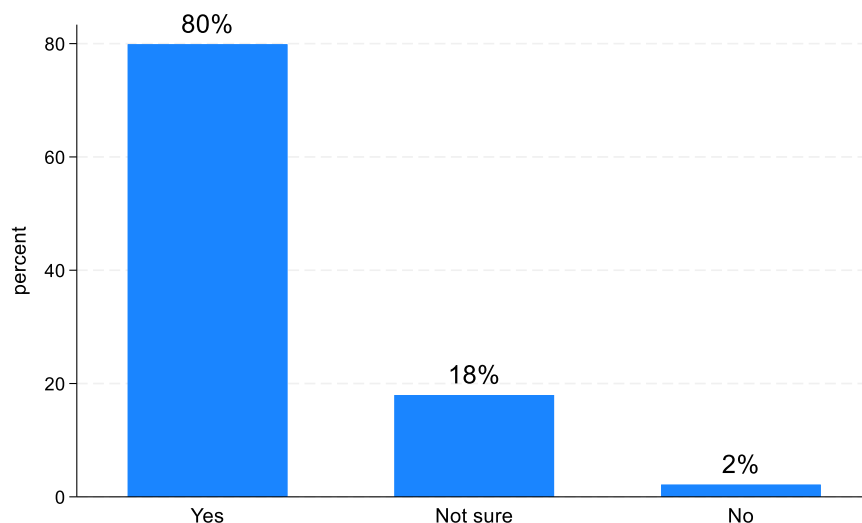


Figure 38 examines the perceived promotion opportunities available to women compared to their male counterparts. It is **noteworthy that 85% of females think they have equal opportunities in their industry**, while 15% feel that they have less promotion opportunities.

WIN-BIG also investigated attitudes and behaviours towards women in EU Blue Economy.

Figure 39 Arctic Sea Basin responses to the WIN-BIG Survey question: “Do you feel that attitudes and behaviour towards women in your industry have changed for the better during your career?”. Female responses only

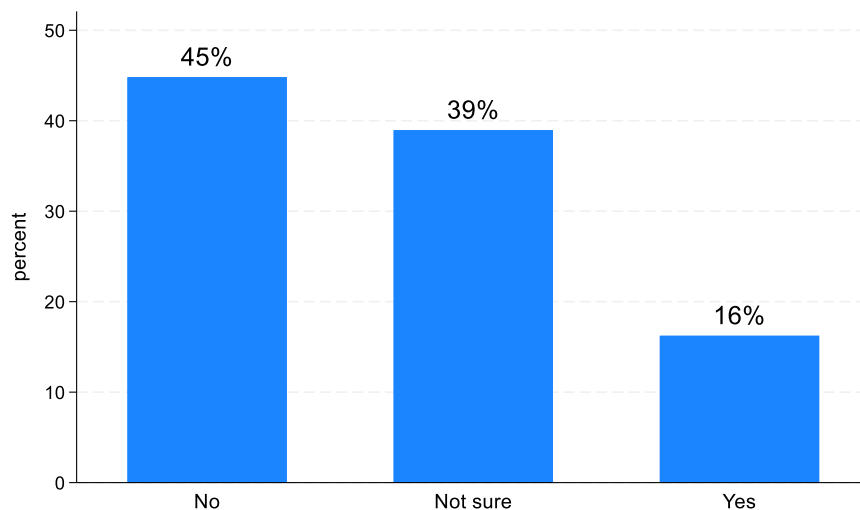


As shows in Figure 39, **80% of female respondents think that attitudes and behaviour towards women in their industry have changed for the better** during their career. However, 18% of women employees answered that they are not sure and 2% stated that that attitudes and behaviour towards women in their industry have not changed for the better during their career. This suggests that while most women perceive progress in gender-related attitudes, some women remain uncertain about the extent of this change or do not see it in their specific industry.

In terms of gender pay-gap between males/females, **55% of female respondents are unsure or believe they are paid less than their male colleagues doing the same job** (Figure 40). The 16% of negative responses illustrates the ongoing gender pay gap, a topic frequently debated in the scholarship and by policymakers. At the same time, the 39% of unsure responses suggests that salary and payment information is likely non-transparent or undisclosed at the company level.

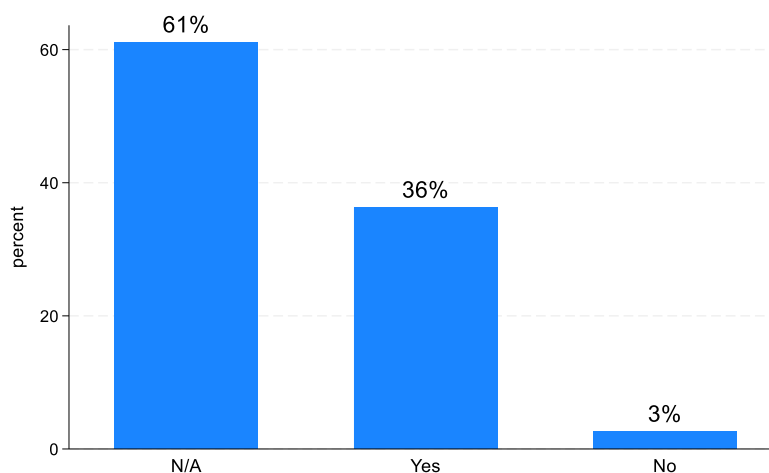


Figure 40 Arctic Sea Basin responses to the WIN-BIG Survey question: “Do you think you are currently being paid less than your male colleagues, doing the same job, in your industry?”. Female responses only



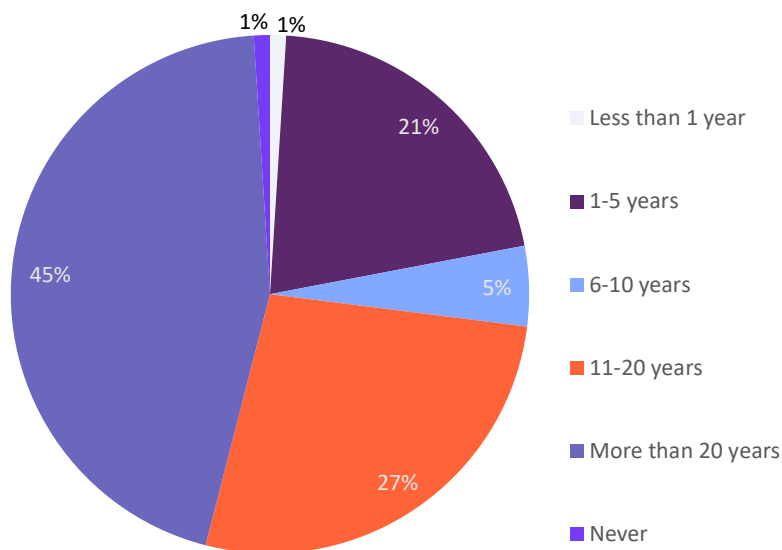
The survey also addressed the question about the provision of suitable equipment for female employees across the blue economy sectors. As shown in Figure 41, a small number of 2% reported that they are not provided with the right equipment to carry out their role. A high percentage of “Not applicable” option is due to the fact that the survey sample in Arctic covers a lower number of responses in ports and shipping and engineering and technology.

Figure 41 Arctic Sea Basin responses to the WIN-BIG Survey question: “If required for your work, are you provided with the right equipment (including the right size/fit) to carry out your role, including Personal Protective Equipment (PPE) ?”, Female responses only



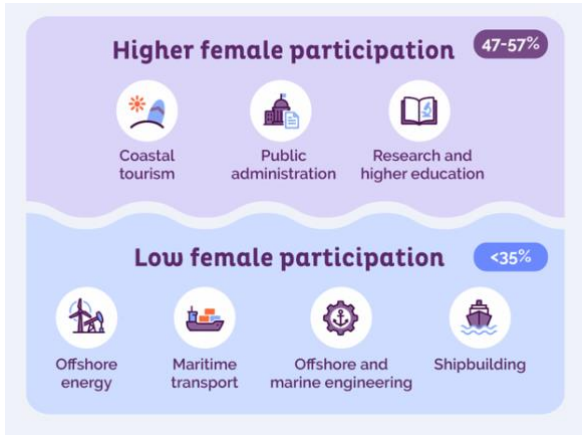
Finally, the survey asks female respondents their views on how long in years it will take to reach gender equality in their industry (Figure 42). Among female respondents, 45% of respondents think that gender diversity in their industry will only be equal in more than 20 years. Another 27% of respondents answered that up to a 10-year time span would be sufficient.

*Figure 42 Arctic Sea Basin responses to the WIN-BIG Survey question: “How long do you think it will be until gender diversity in your industry is equal?”. Female responses only*



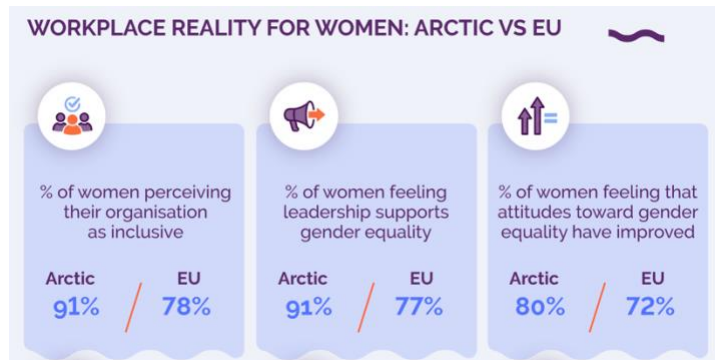
# Conclusions

This report presents findings from a survey that was conducted as part of the WIN-BIG project to map the gender status of the blue economy across six Sea Basins within Europe. The Arctic Sea Area has an estimated **629,508** people employed in the blue economy, and **females comprise 40% of the total labour force**. Women are well represented in sectors such as Coastal Tourism, Public Administration and Research and Higher Education. However, female representation is lower in sectors related to Offshore, Engineering, Transport and Energy related sectors, which may reflect wider trends of lower female representation in STEM intensive fields.



As mentioned at the start of the report, given the low number of respondents to the survey from the Arctic Sea Basin the results reported here are limited and should not be taken as representative of blue economy workers across the region. They can only be seen as a snapshot of attitudes towards gender inequalities in the blue economy sectors within the Sea Basin.

Generally, the results show a mixed picture with respect to gender equality in the blue economy sectors of the Arctic Sea Basin. In terms of **working arrangements and general culture within organisations the picture is relatively positive**. Most female respondents report access to flexible working arrangements, which have become more prevalent since the Covid-19 Pandemic. Although, a certain percentage of respondents (59% females versus 13% males) chose a neutral response to the question about work-life balance. Overall, **the majority of respondents are positive regarding the inclusivity of their work culture**, with female respondents having slightly higher levels of agreement (91% females versus 89% males). A slightly higher proportion of female respondents report that leadership within their organisation is committed to gender EDI, compared to female respondents (91% female versus 88% male).





On the other hand, female respondents report higher levels of abusive, inappropriate or negative behaviour – **Only female respondents have reported gender discrimination within their organisations (10% female)**. More women have witnessed discrimination (14% female versus 8% male). At the same time,

approximately half of all male and female respondents reported some form of harassment (52% female and 48% male).

The views on **career progression** are also somewhat mixed. For example, **female respondents are less likely** to view **processes** within their **organisation as fair**. Interestingly female respondents are more positive about training and mentoring opportunities. For example, **a much higher percentage of women report access to training to support their career aspirations** (88% women versus 39% of men). More **female respondents agreed that they have opportunities to support their career aspirations** (81% female respondents disagree compared to 48% male respondents). At the same time, **there was no major difference between male and female respondents regarding the access to mentoring** (76% female versus 74% male). While **85% of female respondents noted that they have equal promotion opportunities**, 15% think they have less opportunities.

With respect to **policies directly related to advancing equality in the workplace**, there is quite a divergence between male and female respondents. Interestingly, **women are much less likely to report** that their **organisations have formal policies** related to **gender balance** in hiring (55% female versus 71% male) and **women are somewhat less likely to report** that their **organisations** formally support **the promotion and advancement of women** (74% female versus 80% male). Slightly more than half of female respondents (54%) report their firm has a **formal gender policy** compared to 72% of male respondents. Almost half of female respondents (43%) are uncertain whether **barriers exist preventing women being promoted to senior positions** and **12%** think that there are **barriers**, while nearly all men (89%) think there are barriers and only 10% are unsure. Female respondents are more likely to state that social structures in their country impact the achievement of gender equality in their industry (72% female versus 39% male).

For the questions asked solely of female respondents, **51% report** they are **unsure or not treated the same as men**. **One-fifth of women** believe they are being **paid less than men** with a further 39% females uncertain about pay differences. While 80% of females believe that attitudes and behaviour have improved towards women during their career, **72% of females believe** it will take more than **10 years** to achieve **gender equality**.

# Policy recommendations

It is encouraging that gender equality has been recognized by the EU as a strategic and relevant aspect for a just and fair transition, not only through its EU Gender Equality Strategy 2026-2030, but also through the adoption of various cross-cutting directives and action plans. The EU Gender Equality Strategy 2026-2030 introduces its roadmap principles, covering issues related to equal pay and economic empowerment, work-life balance and gender equality in care, equal employment opportunities and adequate working conditions, inclusive education and training, active and safe participation in public and political life, physical and mental health, freedom from gender-based violence, and institutional mechanisms that deliver on gender equality. At the same time, the next step should be the consistent tracking of progress on gender equality by both the EU and its Member States, through systematic data collection. This will help prevent a slowdown in progress and ensure that reforms and implementation of gender equality policies stay on track.

Despite significant efforts made within the framework of the EU Blue Economy Observatory and the EU STECF to collect data on the labour force across EU blue economy, there is **still a lack of data on gender breakdown in certain sectors across the industries**. The EU should develop a **harmonised approach to collating such gender specific workforce data for each blue economy industry**. This would help ensure that Member States report employment figures in a consistent manner. Additionally, the **reporting process should be made mandatory**. Also, tracking progress around experiences in the workplace for both male and female employees would help identify general trends and progress, identify issues and barriers and support the design of policies or solutions that might address barriers.

Generally, it **appears** that there has been **real and perceived progress in gender related issues**. Most respondents report positively on organisational culture and perceive improvements over time. Female respondents are more likely to state that there are training and opportunities to support their career. Somewhat striking is the finding that men are much more likely to state that there are policies and supports in place to promote women's career advancement, compared to women themselves. **Identification of evidence-based policies that support employee enhancement and training for staff** on how such policies benefits the organisation may be useful for all employees. It is important that **men do not view policies promoting women's advancement as having a negative impact on them**. Hence, **training on the benefits of gender parity policies for all employees** is warranted.

In addition, **72% of women in the Arctic Sea Basin believe it will take ten years or more to achieve full equality**, which suggests that faster progress may be needed and more targeted actions and supports to advance equality. Of the current workforce, **almost half of respondents (49%) including both men and women have experienced some form of harassment within their own organisation**. This points to the **need of policies, training and legislation that support rights within the workplace and promote a cross-cutting industry zero tolerance policy towards harassment and discrimination**.

## Caveats

Overall, the survey was weighted to ensure better representativeness at the sectoral level. Nevertheless, the respondents in the Arctic Sea basin case cannot be seen as representative of the full suite of blue economy industries in the survey or of the region. The survey sample of the Arctic area is limited in terms of the country representation, with most of the respondents working in Norway and Sweden. The sample also contained limited number of responses from engineering and technology, marine renewable energy, ports and shipping. Responses do not capture views regarding sectors that involve engineering and technical skill requirements, and we reiterate that **the results reported here cannot be taken as representative of workers in the region's blue economy**, given the small sample.

In terms of future research, systematic data collection ensuring a representative sample is collected across the blue economy is needed. Without better data, it will continue to be difficult to understand what barriers exist for women and identify areas of progress and areas that need further work and supportive or incentive policies. While future research is needed, the current report provides the first evidence identifying the status and barriers that exist for women in the Blue Economy in the EU Arctic Sea Basin.

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