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Anchored Ambitions: Investigating the Enduring Attractiveness of Seafaring in Greece

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ABSTRACT

Greek shipping is the world's leading power and is well known for its efficiency and performance. The Greek fleet represents almost 21% of the global fleet in terms of capacity (deadweight tonnes – dwt) and 60% of the European Union's one (Union of Greek Shipowners, 2023). Apart from the entrepreneurship competence of Greek shipowners, the contribution of Greek seafarers to the development of the so-called "Greek maritime miracle" has been decisive. Greek seafarers are known for their seamanship, qualities as well as their skills. However, according to data from the Hellenic Statistical Authority, the number of Greek seafarers is diachronically decreasing. Indicative of this trend is the fact that from 2000 to 2020, the number of Greek seafarers employed in Greek-owned vessels reduced by 45% (18.450 in 2000 vs. 10.087 in 2020).

The aim of this research is twofold: first, to identify the reasons for the decreasing trend in the number of the Greek seafarers and, second, to highlight the initiatives and other actions the Greek shipping community could adopt in order to attract highly qualified seafarers to the Greek-owned fleet. In this context, a qualitative study was conducted, the purpose of which was to investigate the views of industry's stakeholders, in respect to the factors that shape the downward trend of seafarers figures. The outcome of this study sheds light on the reasons affecting the attractiveness of seafaring profession and further actions required for addressing promotion gaps.

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1 Introduction

While international shipping faces multiple challenges, with the environmental performance and energy efficiency of the fleet being on top of the international maritime agenda, the lack of qualified personnel in a global scale is a "shadow" inherent problem of the industry. With publications such as of BIMCO/ISF Manpower (2016) urging the supply gap, this problem has received a lot of attention, especially during the last years. The report estimates that, by 2025, the world merchant fleet will require additional 147,500 officers, while on the other hand there is a surplus in ratings. The same is also emphasized in various studies such as Obando-Rojas 1999; Dinwoodie 2000; Leggate 2004; Theotokas and Progoulaki 2007; Fei and Lu 2015; Marichev 2018.

The increasingly optimistic forecast of the world merchant fleet is reported to be the main reason for this phe-

nomenon, while maritime nations of different profiles are confronted with different challenges (Fei & Lu, 2015). Thai, Balasubramanyam, Kai Lin and Norsofiana (2013) argue that the solution to the problem is the creation of a "pool of skilled manpower". Nevertheless, if this is the case, then why does this gap still remain open? Attraction, wastage and retention become critical parameters for the smooth operation and development of sea transport, at both the national and global level.

According to Marichev (2018, p. 35), various reasons are affecting the employment of seafarers:

- Economic factors (the level of economic growth, economic sanctions, level of world trade, the volume of state regulation, etc.),
- Political factors (geopolitical relations, political sanctions, etc.),
- Social factors (official employment rate, salary level, etc.)

- Social factors (specialization of ships, the level of automation and General technical equipment of ships, technology in the carriage of goods by sea, etc.),
- Legal factors (e.g. the legal regulation of international merchant shipping),
- The level of education of maritime professionals.

Greece leads the global merchant fleet, while the so-called “Greek maritime paradigm” is the result of both the ability of the Greek shipowners and the seamanship skills of the Greek seafarers as well as the inseparable ties Greeks have with the sea. The Greek-owned fleet consists of 4.870 ships representing almost 9% of global ownership of ships and 17,63% of registered tonnage (UNCTAD, 2022), while at EU level this represents 41% of the European fleet (European Commission, 2022). According to the Union of Greek Shipowners (2023), Greek shipowners control 31,27% of the world oil tanker fleet, 25,32% of all bulk carriers, 22,65% of the world Liquefied Natural Gas (LNG) carriers, 15,79% of chemical and products carriers, 11.46% of the world Liquefied Petroleum Gas (LPG) carriers and 8,92% of the world containerships.

Although the Greek fleet is the most important European fleet in terms of tonnage, Greek shipping does not hold the lead in the number of Greek Merchant Marine officers. According to the report of the European Maritime Safety Agency (EMSA, 2023) concerning data for 2021, Greek seafarers represent almost 12% of the European seafarer population (certified officers). Furthermore, existing data indicate a diachronic decline in the number of Greek seafarers. This fact has raised serious concerns in the Greek shipping industry as it is a crucial issue open for discussion among the Greek shipowners, the representatives of Greek seafarers and the Greek state. This negative trend was not reversed, even during the recent financial crisis in Greece, while shipping could be a reliable solution to the problems of unemployment and continuous wage cuts. This specific research aims, primarily, to investigate -through exploring

the views and perspectives of shipping industry stakeholders the factors leading to the decreasing trend in the number of the Greek seafarers and, secondly, to highlight potential interventions and initiatives the Greek shipping community could adopt, in order to attract highly qualified seafarers to the Greek-owned fleet.

2 Methodology

This study is based on secondary data concerning the seafaring profession from various sources such as the Hellenic Statistical Authority, the Union of Greek Shipowners (UGS), the European Commission, UNCTAD etc. Based on the statistical analysis of available data, predefined questions were constructed in order to conduct semi-structured interviews with the stakeholders of the industry. The semi-structured interviews (qualitative research) were selected as the appropriate tool, providing the research with a flexible structure, as the researchers could delve deeper into the subject as much as possible and could make clarifying questions if deemed necessary.

Qualitative research is a complex concept, and representatives of different theoretical directions adopt different approaches and definitions (Isari & Pourkos, 2015).

Due to COVID-19 restrictions, the interviews were conducted online via the Skype application. The interviewees interviewed in the survey come from the shipping industry, political bodies and maritime associations. For the selection of the interviewees, the triple helix approach was implemented. The primary sampling criteria were the participants’ position and the long-term experience and active involvement in the industry. Furthermore, in respect to participants’ profile, it is noted that they have over 30 years of experience in the sector, with 60% of them being former seafarers who continued their career at the office either as Chief Captain or Crew Manager etc. For this purpose, a list of research questions was compiled (Table 1).

Table 1 Main questions, subcategories of the questions and justification

Main questions of the research	Subcategories of the questions of the research	Justification
What are the reasons for the decrease in the number of Greek seafarers?	Economic, Social, Political and other reasons	Assessment of the responses compared to the available secondary data
What initiatives should be taken to make the maritime profession more attractive?	The role of shipping companies and the Greek state	Assessment of the role of stakeholders
How do you assess the admission system to the Greek Merchant Marine Academies?	Performance of students in the school exams as the only criterion for admission to the Greek Merchant Marine Academies	Public discussion about the admission system to the Greek Merchant Marine Academies
How do you assess the number of Merchant Marine Academies students that abandon their studies before completion?	Social, economic and other reasons	The significant number of Merchant Marine Academies students who abandon their studies before completion
How do you assess the quality of studies of the Greek Merchant Marine Academies, and what are the ways for their improvement?	Quality of courses, teaching staff, infrastructures, equipment	Public discussion about the quality of studies at the Greek Merchant Marine Academies

Table 2 Participants in the research

	Current occupational status	Organization	Previous occupation
INTERVIEWEE 1	Operation Manager	Company	Seafarer
INTERVIEWEE 2	Member	Union (labour)	Seafarer
INTERVIEWEE 3	Crew manager	Company	Seafarer
INTERVIEWEE 4	Crew manager	Company	Seafarer
INTERVIEWEE 5	Member	Public Authority	Economist
INTERVIEWEE 6	Advisor	Association	Manager in a shipping company
INTERVIEWEE 7	Manager	Association	Naval architect
INTERVIEWEE 8	Advisor	Political party	Naval Architect

Source: Authors

The questions aimed at recording the views of experienced actors in the Greek shipping industry in order to contribute to the discussion on the reasons for the reduction in the number of Greek seafarers. A further aim was to provide recommendations for appropriate solutions to restrain this phenomenon.

The majority of the participants stated that they express their personal opinions on the matter under research and not the official views of the bodies / companies they represent. The authors, as far as research ethics are concerned, informed the participants prior to every interview that their names would not be used in the publication.

3 Evolution of seafaring labour in Greece

Based on the data of the recent inventory of the Hellenic Statistical Authority¹, the total seafaring workforce accounts for 10.087 Greek seafarers, while another 6.454 foreign seafarers work on Greek-owned vessels (Table 3 and Figure 1). The inventory includes all kinds of vessels that are over 100 grt² flying the Greek flag or are contracted with the Seaman's Pension Fund (SPF).

Comparing the corresponding figures 42 years ago, it is observed that the number of seafarers serving on Greek ships has shrunk by almost 81% (1978 – 2020), whilst significant turning points are the year 1980, when there was a decrease of almost 43%, and the year 2010 with the reduction reaching 27%. Respectively, during the year 2012, there was a significant increase in the number of seafarers at a rate of 16.5%. This development could be attributed

to the increase in the number of graduates from the Merchant Marine Academies.

Regarding the origin of Greek seafarers, according to the data in Table 4, 36.7% of Greek seafarers come from the Region of Attica, which is the capital of Greece. 37.5% come from the other continental regions³ of the country, while 25.8% come from the four island regions. The percentage of seafarers from the island regions is considered significant especially considering that according to the last census conducted in Greece in 2021 (ELSTAT, 2023), only 12.9% of the population lives in these regions, demonstrating the strong ties of the islanders with the sea.

The largest number of seafarers, ranging from 42.7% (minimum-2014) to 53% (maximum-2000), were employed on passenger vessels. However, the general trend observed is the longitudinal decline, which can be explained by the reduction of the coastal shipping fleet, especially after the financial crisis (Interviewee 2). The analysis of the data indicates the equal importance of both coastal and deep-sea shipping in shaping the final levels of employment in the industry of Greek-flagged or foreign-flagged ships contracted with Social Pension Fund (SPF). According to estimations by the Interviewee 6, almost 50% of all Greek seafarers and almost 100% of the crew in lower ranks are employed in passenger and shortsea shipping vessels, while deep-sea shipping covers its needs for crewmembers of lower ranks with foreigners. In this context, it was noted that on the part of the state, and in order to strengthen the shipping industry, the pursued policy favoured this trend. Within twenty years, there were eleven approval acts to reduce the composition of the Greek flag. (Interviewee 6)

⁵⁷ According to the Hellenic Statistical Authority, the census was conducted on the basis of the Ships' Register provided by the National Seaman Pension Fund. Data refer to the total of the merchant ships, of 100 GRT and over registered under the Greek flag or Greek-owned ships under foreign flag contracted with the Seamen's Pension Fund.

² Grt: Gross register tonnage

³ The number of seafarers from the self-governed Mount Athos has been added to the nine mainland Regions of Greece

Table 3 Evolution of seafaring labour on merchant ships of 100 GRT and over, under Greek flag or Greek – owned under foreign flag, contracted with the Seamen’s pension Fund.

Year	Number of Greek seafarers	Change Greeks %	Number of foreign seafarers	Change foreigners %	Total number of Greek and foreign seafarers	Total change %
1978	58033		28236		86269	
1980	59534	2,59%	32338	14,53%	91872	6,49%
1982	40647	-31,72%	12094	-62,60%	52741	-42,59%
1984	40720	0,18%	8464	-30,01%	49184	-6,74%
1986	32340	-20,58%	5490	-35,14%	37830	-23,08%
1988	28735	-11,15%	8632	57,23%	37367	-1,22%
1990	26766	-6,85%	10085	16,83%	36851	-1,38%
1992	25278	-5,56%	13717	36,01%	38995	5,82%
1994	25842	2,23%	13280	-3,19%	39122	0,33%
1996	23992	-7,16%	12774	-3,81%	36766	-6,02%
1998	20505	-14,53%	13164	3,05%	33669	-8,42%
2000	18450	-10,02%	10935	-16,93%	29385	-12,72%
2002	18747	1,61%	14179	29,67%	32926	12,05%
2004	17897	-4,53%	13023	-8,15%	30920	-6,09%
2006	16182	-9,58%	13078	0,42%	29260	-5,37%
2008	15721	-2,85%	11172	-14,57%	26893	-8,09%
2010	11720	-25,45%	7912	-29,18%	19632	-27,00%
2012	13026	11,14%	9854	24,54%	22880	16,54%
2014	12663	-2,79%	10262	4,14%	22925	0,20%
2016	12163	-3,95%	9277	-9,60%	21440	-6,48%
2018	12042	-0,99%	8649	-6,77%	20691	-3,49%
2020	10087	-16,23%	6454	-25,38%	16541	-20,06%

Source: Hellenic Statistical Authority, elaborated by the authors

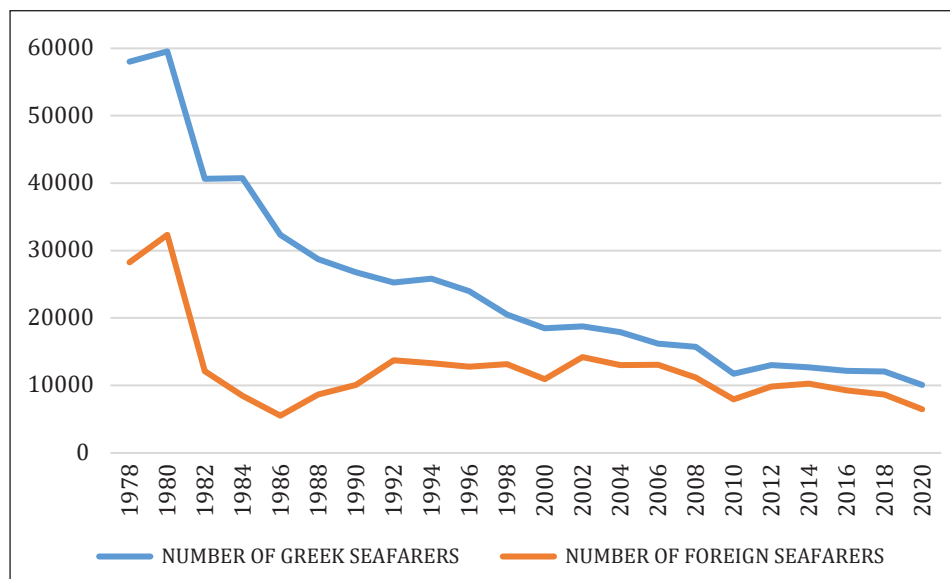


Figure 1 Evolution of the number of Greek and Foreign Seafarers

Source: Hellenic Statistical Authority, elaborated by the authors

Table 4 Number of Greek seafaring labour on merchant ships of 100 GRT and over, under Greek flag or Greek – owned under foreign flag, contracted with the Seamen’s pension Fund by region of origin.

Type of region	Region	Seafarers by region			
		2014	2016	2018	2020
Mainland	Attiki	4575	4345	4368	3699
Mainland	Dytiki Ellada	1060	1033	1113	932
Island	Kriti	808	779	874	720
Island	Voreio Aigaio	1160	996	814	697
Island	Notio Aigaio	823	827	794	679
Mainland	Stereia Ellada	686	717	684	586
Mainland	Anatoliki Makedonia, Thraki	736	697	668	521
Island	Ionia Nisia	681	710	646	509
Mainland	Peloponnisos	688	632	627	500
Mainland	Kentriki Makedonia	560	586	560	459
Mainland	Thessalia	569	542	533	455
Mainland	Ipeiros	230	201	226	158
	Mount Athos (self-governed)	0	0	35	120
Mainland	Dytiki Makedonia	87	98	100	52
	Not declaring	0	0	0	0
	TOTAL	12663	12163	12042	10087

Source: Hellenic Statistical Authority

Table 5 Distribution of Greek seafarers by category of merchant ships of 100 GRT, and over, under Greek flag or Greek-owned under foreign flag

Year	Cargo ships	Tankers	Passenger – Tourist ships	Other	Total
2000	4378	3779	9788	505	18450
2002	4511	3885	9828	523	18747
2004	5153	3886	8268	590	17897
2006	4230	3848	7755	349	16182
2008	3819	3708	7782	412	15721
2010	2537	3202	5717	264	11720
2012	2864	3948	5663	551	13026
2014	2647	4045	5419	552	12663
2016	2146	3755	5670	592	12163
2018	1877	3598	5949	618	12042
2020	1391	2916	5250	530	10087

Source: Hellenic Statistical Authority

In the late 1970s, foreign seafarers numbered 28.200, representing 32% of total employment. The evolution of foreign employment has fluctuated during the period under study, following the general downward trend. However, there is an increase in the ratio of Greek/foreign seafarers, with the second category constituting 39% of all seafarers. Focusing more on the decade 2008-2020, the parallel decrease of both Greek and foreign seafarers is noticed, by 38%. However, the number of Greek seafarers decreased by 36% while that of foreigners considerably less by 42%.

Regarding the distinction between officers and ratings, it is noted that there is an equal distribution of Greek seafarers between the two categories of personnel. In total, it is observed that the number of Greek officers has decreased by 83% from 1980 to 2020. Respectively, in terms of foreign officers, there is a variation in their number from 1980 to 2006. However, during the period 2012-2018, relative stability is recorded in terms of the total number of employees (average 1,328 people). Nevertheless, there is an apparent decline in 2020.

Table 6 Distribution by major groups of specialities

Year	Senior personnel ¹		Lower personnel ²		Cadets and medical personnel ³		Personnel with no speciality ⁴	
	Greeks	Foreigners	Greeks	Foreigners	Greeks	Foreigners	Greeks	Foreigners
1980	27062	1680	30660	29810	1556	262	256	586
1982	17528	479	21970	11445	1094	61	55	109
1984	15739	287	23442	7558	1045	69	494	550
1986	12246	190	18919	4600	802	24	373	676
1988	11415	174	16481	7074	686	89	153	1295
1990	10711	280	15078	8528	760	89	217	1188
1992	10295	596	13874	10806	915	103	194	2212
1994	10511	708	13730	10517	1411	78	190	1977
1996	9679	614	12605	10279	1562	111	146	1770
1998	8087	630	11282	10409	962	133	174	1992
2000	7266	409	10170	8848	858	125	156	1553
2002	7280	545	10375	11783	926	171	166	1680
2004	7325	808	9238	11195	1258	188	76	832
2006	6703	690	8147	10759	1263	168	69	1461
2008	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2012	6079	1278	5578	8377	1356	154	13	45
2014	6117	1335	5067	8633	1467	213	12	81
2016	5623	1364	5199	7656	1328	207	13	50
2018	5342	1336	5435	7032	1261	213	4	68
2020	4637	975	4748	5357	689	102	13	20

Source: Hellenic Statistical Authority

With regard to, the ratio between Greeks/foreigners in the lower crews, a reverse trend is observed. Particularly, since 1988, there has been a gradual increase in foreigners in lower crew positions relative to the total seafaring population. In the same year, foreign seafarers constituted 30%, while in 2020, this percentage reached 53%, with 2014 recording the highest percentage (63%).

Historically, the main reason for the substitution of Greek seafarers by foreigners was the high crew cost, which affects the overall competitiveness of a shipping company. At this point, it should be stressed that the respective collective agreements determine wages at secto-

ral level, yet, in the practice of shipping, wage level is the result of bilateral negotiations.

4 Maritime Education Admission System

The admission system to the Merchant Marine Academies is a point of criticism. The current system foresees entrance based on the performance of candidates in national exams. In this context, all interviewees critically commented that the current system is not effective in the sense that young people who want to pursue a maritime profession are excluded, causing an imbalance between supply and demand. Figure 2 illustrates the evolution of the number of students who were enrolled and have graduated from the Greek Merchant Marine Academies since the academic year 2010-2011.

According to Dinwoodie (2000), it is doubtful that even students that have enrolled in maritime studies courses will eventually follow a lifelong career as seafarers or even work in the shipping industry in general. Regarding Greek Merchant Marine Academies' students, it is observed that on an annual basis their number fluctuates, with the average number of admitted students being 1,476 (2011-2019).

⁴ Senior Personnel:(Masters A, B', C', Engineers A, B', C radio officers A-B, pay masters A-B'and chief caterers).

⁵ Lower Personnel (assistant caterers, captains A, B', C', boatswains, pumpmen, sailors ship's boys, motor-drivers A', B', greasers, wipers and trimmers, motormen, chief stewards, stewards A', B', assistants, chief cooks, cooks A, B', C assistant cooks, electricians, tug captains trainers of apprentices for the deck, engines and other specialties).

⁶ Cadets Personnel:(cadet deck officers, engineers, paymasters). Health Care Personnel (doctors, medicines, nurses and other)

⁷ Personnel with no maritime specialty: Laid up ships keepers and other personnel with no specialty.

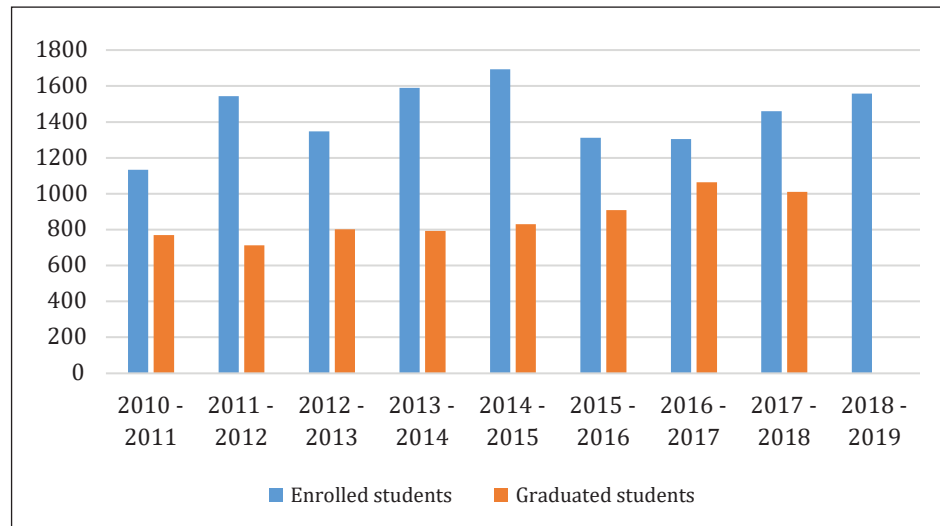


Figure 2 Number of enrolled and graduated students (Greek Merchant Marine Academies)

Source: Hellenic Statistical authority and naftemporiki.gr, elaborated by the authors

However, the number of graduates is a matter of particular concern, since based on the available data (2011-2018), it appears that, on average, only 50% of them graduate.

According to Interviewee 8, special emphasis is placed on the number of Merchant Marine Academies students who do not complete their studies as opposed to the number of students who do not complete their studies at other higher education institutions. *“It makes sense and comes as no surprise that young people do not complete their studies at the institution of their choice, as during their studies they comprehend that it does not suit them and choose to pursue another career in a different field that satisfies their personal ambitions. This is something legitimate. They are entitled to do so”.*

5 The stakeholders' perspective

The decline in the number of young people entering the seafaring profession is not the result of a single factor. According to the interviewees, it is the result of wider socio-economic conditions, prevailing during the period under review, their impact on the image of the maritime profession, and, at the same time, the result of endogenous changes and events that took place in the shipping industry itself.

Regarding the general socio-economic conditions, from the '80s onwards, Greece entered a period of political change and economic development, with the increase in wages being a priority of the policies of that period. This has created two main trends in the vocational rehabilitation of young people; the shift to the tourism professions and the preference for employment in the public sector. At the same time, the reduction of the wage gap between land and sea professions is mentioned as a decisive factor in

the formation of the perceptions of young people about the comparative advantages of the maritime profession, with economic benefits being predominant.

At the same time, it is a period characterized by an “escape” of vessels from the Greek flag, while from 2004 onwards the decline observed could be related to the devastation of the Greek cruise industry, which is a sector that employed many seafarers, both officers and ratings. This created a wave of unemployed seafarers who either retired or changed careers as they could not be absorbed in another sector of the shipping industry, while the vast majority turned to coastal shipping. Besides, since 2010, another endogenous trend has been observed that concerns seafarers of general duties and that is the reduction of the number of ships serving the Greece-Italy line. (Interviewee 2)

An important reason given by all the interviewees is the lack of information about the nature and peculiarities of the maritime profession. In particular, participants acknowledged that the main source of information is primarily family and friends/social contacts, which usually conveys misinformation about the nature of the profession. In this context, the existence of “official” information, from the schools, for example, does not exist. For this reason, there is a distorted image that creates confusion about the conditions that prevailed in the past, contrary to the existing modern environment of the ships and the life of seafarers on board.

There was a specific reference to the perception of the family in discouraging young people from following the seafaring profession. The Interviewee 1 reported that *“mothers do not want their children to pursue a maritime career and usually prevent them. It is no coincidence that even families who already have a member who is a seafarer*

are reluctant towards the seafaring profession, magnifying the difficulties their children may face on board”.

However, according to Katsounis et al. (2020) research about the perception of seafarers' wives of the maritime profession, in the island of Chios which is a traditional Greek maritime community, it is observed that this perception has changed significantly. More and more mothers are more positive for their children to follow a seafarer career, as, despite the difficulties, they recognize the advantages this profession offers.

According to the study on the profile of young students in the Merchant Marine Academies (Bissias, Charitos and Pappas, 2023), 81% of the young people choosing seafaring profession, had “good” or “very good” information about the shipping industry before being admitted to the Academy, while 14% of the sample surveyed had moderate knowledge about the industry, as they have chosen this particular academy after personal search and interest. Therefore, a maritime country like Greece could invest in the creation of an appropriate and competent seafaring workforce, starting with primary education, with systematic information, so that the children may become familiar with the maritime profession and place it among their career alternatives.

Another reason contributing to the declining trend of seafarers is the backlog of maritime education and training in Greece. This lag is reflected in two axes: The first concerns the state of infrastructure and equipment, which is characterized as outdated given the technological developments in the industry. The second concerns the level and competences of the educational personnel. In particular, in terms of infrastructure, participants emphasized the significant contribution of various Greek Ship-owners who, over time, financed the maintenance and upgrading of the Merchant Marine Academies. However, there is a gap in terms of maintaining the standards by the competent authorities.

Regarding the educational personnel in Merchant Marine Academies, all the participants stated that the quality of education depends on the professional level of the professors, noting that the existing salaries are very low. The low wage level acts as a disincentive to attracting specialized teachers. More specifically, Interviewees 1 and 2 stated that still active captains would not leave their sea-careers for a lower income land-based job. Therefore, the Merchant Marine Academies are staffed with retired professionals who are long absent from their maritime duties or former seafarers who left the sea before reaching the highest ranks (e.g. captains, chief engineers). At this point, Interviewee 1 noted that, in recent years, there has been a “competition” between public and private education, as private maritime academies have invested in attracting specialized educational staff through offering higher salaries.

The need to attract young people to the profession resulted in watering down the admission grade system and

the enrolment of young people who are not completely aware of their choice, to the Greek Merchant Marine Academies. **With the onset of the financial crisis, it was expected** that young people would turn to the seafaring profession. In this context, a marginal increase in the enrolment resulted in the partial improvement of the admission grade in the merchant marine academies. In respect to the pool of candidate cadets Interviewee 4 emphasized that in the past, the seafaring profession used to attract young people facing financial difficulties, and the sea was considered to be an alternative job opportunity and a means of improving their social status. In particular, the place of origin of the vast majority was islands while in the so-called maritime communities such as Chios, Oinousses, Syros, etc., the seafaring profession was a family tradition.

Based on the study by Bissias, Charitos and Pappas (2023), it is found that 29% of them come from families with a yearly income less than 12.000€ and 35% with a yearly income 12.000-24.000€. A particularly important finding of the survey is the fact that 16% of the students come from a family with a maritime background. **Furthermore**, the same study confirms that, although more and more young people from the mainland are entering the Greek Merchant Marine Academies, the islands are still a significant “source” of seafarers (23% of the study's sample).

Another change that has been observed in recent decades is the reduction of the time seafarers stay on board. Although new technologies have brought the seafarers closer to their families, with better and more frequent communication, they have also created alienating working conditions on board. The lack of bonds among crewmembers and the pressure by the family and friendly environment cause young people to redefine their careers in the shipping industry, forming alternative career paths. In the past, as mentioned by the interviewees, in order for seafarers to continue their career in the company's offices, they had to reach the rank of the captain or a Chief Engineer. Nowadays, young people, after gaining a few years of sea experience followed by a training period (to obtain a BSc or an MSc degree), have the opportunity to pursue job positions ashore. Besides, there are many shipping-related professions, and as a result, more young seafarers are attracted by these professions. As one interviewee characteristically noted: *“These positions are filled by people who have experience at sea and return to the mainland to serve the needs of the sea.”*

The average length of stay of students in the seafaring profession is 44 years (Pappas, 2020). Based on the study of Pappas (2020) 17% of first-year students want to retire from the seafaring profession before the age of 34, and therefore prior to reaching the position of First Captain or First Engineer, while 37% wish to end their careers in the profession between the ages of 35-44, although they will still be fully productive. Finally, 47% stated that they would like to have a career in the profession for at least 45 years old.

Regarding the recent legislation passed in 2020 that allows shipowners to hire lower crew under current ITF contracts, interviewees expressed the view that they could not assess the real impact of this legislation on the conditions for attracting enough seafarers. As interviewee 3 noted: *"A law was passed that reduces wages, but do the crews exist?"* He further noted that a seafaring job offer with a wage similar to the one on land is not attractive for young people who have to stay away from their families.

6 Incentives, initiatives and potential interventions

6.1 Enhancements and optimal methodologies that shipping companies may employ with regards to the recruitment and administration of skilled personnel

The issue of attracting competent and valuable human resources within the shipping industry community is a widespread problem that is not unique to the industry. To effectively address this challenge, it is imperative for shipping companies to consider and adopt the successful practices of other industries that have tackled similar challenges in attracting human resources. A crucial priority that should receive utmost attention, particularly for large shipping companies, is the establishment of modern and professionally organized human resources departments modelled along the lines of multinational corporations. The conventional crew offices that are still in use in many shipping companies cannot adequately handle modern challenges. To address this issue, it would be beneficial to recruit seasoned executives from other sectors of the economy, particularly those with extensive experience in human resources management. These resources could transfer valuable knowledge and expertise to the shipping industry; consultancy firms may also offer significant support in addressing this challenge.

Particularly concerning employment at sea, living conditions and prolonged absence from the family home environment are the primary disincentives. Despite notable strides made by some companies, considerable room for enhancement remains. The implementation of improved working and living conditions, facilitated communication through contemporary technologies, and shorter absentee periods will notably alleviate the primary disincentives.

Additionally, shipping companies should take the sensitive matter of women's employment into more serious consideration. It is acknowledged that not all women possess the aptitude for a career at sea, just as not all men do. Nevertheless, there are numerous capable young women today who possess the requisite qualifications and are determined to put their abilities to the test. Depriving them of this opportunity does not benefit the industry. It is imperative for the industry to acknowledge that no sector of the economy can afford to maintain a policy of exclusion that accounts for 50% of the workforce. From a wider per-

spective, similar to all fields of the economy, it is necessary to embrace a modern, open, and less inward-oriented corporate culture to attract and retain valuable human resources.

6.2 Enhanced communication efficacy

Numerous shipping companies have implemented significant measures. Regrettably, the effectiveness of such undertakings has not been adequately conveyed to the public. Unfortunately, there exists a communication shortfall between the Greek society and the maritime sector, especially among the youth. This discrepancy is primarily a result of the inconspicuous approach maintained by the managers of major shipping companies and the Union of Greek Shipowners. This decision is a deliberate one and may be attributed to the industry's international nature, its proponents' dispositions, and, possibly, concerns surrounding the consequences of excessive exposure to publicity and public debate.

The consequence of selecting a low profile is the absence of information regarding the changes taking place in the shipping industry. This perpetuates misconceptions and stereotypes about the way shipping companies function, including fleet upgrades, living and working conditions, opportunities, and prospects. Presently, the choice of maintaining a low profile causes division within the maritime community. As shipping companies restructure themselves to integrate the standards of modern times and younger generations take the helm of many businesses, there are increasing calls for greater extroversion.

Without effective communication of the advancements in the industry and the ongoing transitions, prevailing stereotypes and inadequate information will persist. A prime illustration is the matter of working and living conditions on ships. The pleasantness of the environment is the primary parameter by which young individuals assess alternative employment opportunities. Regrettably, due to this factor, the majority of young people view seafaring work as an inferior option compared to other alternatives.

Currently, it can be stated that the Greek fleet is among the youngest globally, with an average age of 8.5 years. This translates into an improved quality of life for seafarers, compared to previous conditions. A considerable number of ships owned by Greeks are now fitted with facilities for leisure and relaxation, including gyms. Additionally, the absence of interaction with their families and usual domestic environment contributes to discouraging young individuals from pursuing a profession at sea. However, this apprehension could potentially be eased if young mariners were informed about the availability of viable communication channels through technologies such as Skype and the internet.

Finally, the importance of permanence in employment and potential for long-term career growth are significant priorities for young job seekers. Particularly within mari-

time industries, these factors are commonly perceived as potential drawbacks. However, it is crucial for young individuals to recognize that working at sea can in fact lead to promising job opportunities on land in the future.

6.3 Issues related to education

A skilled workforce contributes to sustainable growth, leads to more innovation and improves companies' competitiveness. The green and digital transitions are opening new opportunities where skilled workers will have better job prospects and fully engage in society.

The New Skills Agenda for Europe confirms the same status and suggests taking action for the improvement of the quality and relevance of training for obtaining the necessary skills. A challenge met across blue economy is the poor image of the activities among the young and the lack of information in respect to career opportunities, which in combination with the ageing trend of European population may generate lack of qualified personnel.

At the same time the maritime sector is undergoing a profound technological transformation which is not currently reflected on existing curricula. Despite the various efforts taking place at EU level for enhancing the level and quality of knowledge provided by the vocational and higher educational institutions, there is still a gap in respect to the expectations of the business world. Therefore, there is an increasing need to bridge this gap in order to support career opportunities in the maritime sector. However, maritime professions do not require only specific industry knowledge but also interdisciplinary skills in order to respond successfully to the multicultural environment and the constantly changing conditions of international shipping. Maritime Universities or academies face several challenges in preparing students to meet workplace demands in an increasingly complex, knowledge and technology-based environment. Maritime students often lack generic skills that are requested by employers, such as critical thinking, creativity, problem solving, communication and teamwork.

In Greece, the current maritime education and training does not satisfy the demands of the industry and international competition. Although the number of candidates applying to the schools has increased, the schools remain underfunded and understaffed, and the curricula do not address contemporary needs. This seems disheartening, particularly when considering Greece's rich shipping heritage, which could attract prospective students from other countries.

The initial and fundamental requirement for improving the quality of education is to establish a closer collaboration between universities and shipping companies. The executives of the Maritime Academies ought to endeavour in attaining a more active involvement of the industry in the design of training curricula to ensure they meet current expectations. Furthermore, the integration of career-ori-

ented events, such as career days, in the academic programs of Maritime Academies, akin to international universities, should be earnestly considered as it provides students with the opportunity to make initial contact with their potential employers.

On the part of the shipping companies, it would behoove them to expand the number of internships available. As demonstrated by successful companies, this approach is effective in attracting highly valuable human resources. With the maritime profession's ever-increasing demands and the evident inadequacy in the training programs currently offered by Maritime Academies, there is a pressing need for retraining and specialization among graduates. It would be prudent to consider implementing schools offering postgraduate degrees in the medium term.

Furthermore, the shortage of qualified masters, engineers, and electricians in the maritime industry is a significant concern. Addressing this issue demands urgent action. There is a pressing need for Maritime Academies to enhance their curriculum by introducing more courses in electrical engineering. Additionally, shipping companies must focus on university departments that are currently operational in the training of electricians. In order to address this issue effectively, Maritime Academies could consider reopening boarding schools and offering free meals to students, as it has been successful in military academies around the world. This would be a crucial step in ensuring that maritime students have access to the education and training they require to meet the industry's growing demands.

Ultimately, the responsibility for the improvement of the Maritime Academies, the recruitment and enhancement of the educational standards lies with the state. This pertains to the various state structures operating under its auspices. The reduction in employment opportunities for Greek seafarers will inevitably have adverse effects on the longevity of insurance institutions. Further, failing to retain an adequate number of well-trained staff could lead to the outflow of shipping companies from Greece in the future. Both the Union of Greek Shipowners and private shipping companies extend financial support to certain Maritime Academies. This assistance takes the form of provisions such as food and accommodation facilities. However, given their lack of managerial involvement or participation in the curriculum's development, many shipping companies are understandably hesitant about providing financial support to state-owned institutions.

Potentially, the adoption of more adaptable administrative structures featuring an informal yet efficient representation of the sector in decision-making processes and, particularly, in the creation of curricula could bolster the involvement of the maritime community in efforts to financially support and enhance schools. Given these circumstances, it is unsurprising to observe the potential for an alternative solution, such as operating private academies with the backing of the maritime family. Numerous

representatives from shipping companies maintain that this represents the sole solution to address the issue and posit that such a development could contribute to greater growth and competition, ultimately elevating existing state-sponsored academies in the long-term.

6.4 The role of the state

It is widely acknowledged that the provision of support to Maritime Academies constitutes a primary and fundamental requirement of the State. Given that the operation of private academies is not constitutionally permissible for the most dynamic sector of the Greek economy, it is the only assistance sought from the State. In recognition of shipping as a crucial pillar of the economy, and in exercising exclusive responsibility for higher education, the State must ensure that sufficient resources are allocated towards enhancing the Academies to support the industry and foster employment.

The state must adopt a practical and realistic approach to address the matter of employment for junior sea staff. Given the current climate of fierce global competition, restoring the appeal of Greek junior crew to shipping corporations appears to be an arduous task. It is conceivable that the prevailing salary rates on the international stage may have irrevocably compromised the prospects of Greek junior crew. However, endeavours to align Greek collective labour understandings with international standards may facilitate the employment of a modest number of Greeks in the maritime sector.

In conclusion, it is imperative that the Greek government actively engage in the recognition and promotion of the crucial contribution of the shipping industry to the national economy. It is undeniable that the responsibility falls primarily on the shipping community to underscore the significance and role of this sector. However, the state must also play a pivotal role in this endeavour in order to foster a positive narrative that will rekindle Greek society's affinity with seafaring and the sea. Failure to do so risks the demise of a centuries-old tradition or its monopolization by a select few multinational corporations, detached from their roots.

7 Conclusions

The study of the official statistical data relevant to the number of Greek seafarers revealed a significant weakness. The methodology implemented by the Hellenic Statistical Authority provides a "snap-shot" of the sea labour state, since the census is conducted every two years and concerns the crew of vessels over 100 GRT that fly the Greek flag or are contracted with the SPF. To that extent, seafarers working on vessels flying the EU or third country flags are not recorded (Interviewees 5 & 6) and as such, there is a data gap, misleading actual figures. In addition, available data from other sources such as EMSA reveal a

slightly different picture. Based on EMSA's report on EU Seafarers (EMSA, 2023) the number of Greek officers holding a valid certificate of competence is 21,541 for the year 2021, while the corresponding number recorded by the Hellenic Statistical Authority for the same year is just over 10 thousand. In the same context, stakeholders' estimates converge with ESMA's data (Interviewees 5 & 6). The numbers above are in line with the relevant report of Amitsis (2023), where from a methodological point of view, the calculated seafarer's employment includes only members of constituted crews, which are identified by the term 'registered seafarers', and not the other categories for which an Analytical Periodic Statement of Seafarers is also submitted to the SPF (e.g. skippers, senior staff of seafarers' trade unions, lecturers at merchant academies, chief masters and chief engineers working in shipping companies, etc.).

The recent economic crisis has affected the current state of maritime education and training and in combination with the "wrong image" young people have about seafaring profession has generated a broader "negative" perception towards the profession, the benefits of the seafaring career and the living conditions on board.

Summarising, the interviews confirm the reasons for the reduction in the number of crews worldwide as recorded by previous studies, which has an impact on both the Greek-owned fleet and the number of Greek seafarers. The interviews with people with long experience in shipping indicate that the reduction in the number of sea personnel and also in the number of young people that wish to pursue the maritime profession is the result of various factors; social, economic, political, technological and reasons related to maritime education.

The social factors affecting the number of Greek seafarers are mainly related to the fact that the seafaring profession has special requirements. Although a career at sea has many economic benefits, the absence from home – although significantly reduced compared to the past – is a deterrent condition for a young person to follow this career path. The long absence from the family cannot be replaced by the higher income.

In terms of economic factors as mentioned above, a seafarer's salary is significantly higher compared to the ones in a land-based industry. As reported by Interviewee 6, it is estimated that a Greek merchant marine officer with a long maritime service record, even when (and if) he/she decides, at some point after several years, to pursue a shore-based position in a shipping company, at the end of his/her career (60 – 65 years old) will earn between 2,300,000 and 2,550,000€ (net). This means that the annual income will be 53,000 – 62,000€. In addition, if there were 15,000 additional officers who could be absorbed by the Greek-managed shipping industry, there would be an inflow of foreign exchange in Greece from 800,000,000 to 950,000,000€ (net). It is clear that the increase in the number of Greek seafarers would have a positive impact not only on the income of a significant number

of citizens but on the country's economy as well. However, economic impacts are not an incentive for lower-ranking seafarers as wages at sea are not much higher than those on land if we also consider the time required to be on board. It should also be taken into account that a seafarer is not employed on an annual basis as the average stay of a seafarer on board on deep-sea vessels is six to nine months per year, and there is a significant period until the next voyage. On the other hand, the wages on land, including the holiday bonuses, are 14 per year. During a time of economic crisis and fiscal adjustments in Greece, a paradox was observed. There was no significant increase in the maritime workforce despite the sharp rise in unemployment and the continuous reductions in wages. One would expect shipping to be a way out of this crisis. According to Interviewees 5 and 8, rapid technological development has resulted in upgrading ship operations, but also in the "extinction" of some specialities (e.g. radio operators) which is an additional reason for the reduction in the number of seafarers.

Maritime education is an issue of public debate among the stakeholders of the shipping industry. The interviewees stressed that it is necessary for the state to further invest in specialised educational staff and equipment in order to upgrade the Merchant Marine Academies. Additionally, it should be noted that the private initiative through donations is of the utmost importance as well. There is also an intense concern about the admission system in the Merchant Marine Academies. The participants in the research stressed out that the admission to the Merchant Marine Academies should not only be connected with the national school exams. There are also concerns about the number of students leaving the Merchant Marine Academies. The reasons here also vary; many young people are not ready to cope with the high demands of the seafaring profession while others are admitted only to take advantage of the scoring system offered by the academies for their participation in a public tender.

Although Greece is a country with a small population that has faced many economic challenges in the last decade, it continues to be the dominant force in shipping worldwide. The so-called "Greek maritime miracle" is not the result of a single factor. It has been supported by the entrepreneurship competence of Greek shipowners and the seamanship skills of Greek seafarers. These two elements are inseparable, and one cannot exist without the other. On this basis, there should be an interactive discussion among the stakeholders (shipping companies, representatives of the seafarers and the Greek state) to ensure the viability of Greek shipping in the coming years. The proposed actions include an information strategy for young people not only in traditional Greek maritime communities but also in Greek regions without a maritime tradition. Through an organized campaign, young people will have the opportunity to learn about the seafaring profession and have a complete and clear picture of both its advantages and disadvantages.

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References

- [1] Amitsis, G. (ed.). (2023). *The Seafarers Employment in Greece*, Report of the *Greek Seamen's Pension Fund (NAT)*. Report of the Greek Seamen's Pension Fund (NAT), Piraeus. (In Greek). Available from: <https://www.nat.gr/wp-content/uploads/2023/04/%CE%95%CE%9A%CE%98%CE%95%CE%A3%CE%97-%CE%9D%CE%91%CE%A5%CE%A4%CE%99%CE%9A%CE%97%CE%A3-%CE%91%CE%A0%CE%91%CE%A3%CE%A7%CE%9F%CE%9B%CE%97%CE%A3%CE%97%CE%A3-2023.pdf>.
- [2] BIMCO, ICS, (2016). *Manpower Report: The Global Supply and Demand for Seafarers in 2015*. Maritime International Secretariat Services Limited, London.
- [3] Bissias, I., Charitos, M. and Pappas, C. (2023, April). Young people in Public Maritime Training. [in Greek] *Naftika Chronika*, 99 – 118. Available from: https://special-editions.s3.eu-central-1.amazonaws.com/NX_Report_April_2023.pdf. [Accessed 20 July 2023]
- [4] Dinwoodie, J. (2000). The perceived importance of employment considerations in the decisions of students to enrol on undergraduate courses in Maritime Business in Britain. *Maritime Policy & Management*, 27(1), 17-30. <https://doi.org/10.1080/030888300286653>.
- [5] ELSTAT (Hellenic Statistical Authority). *Technological, Vocational and Ecclesiastical Institutions (students, Institution, academic staff) (end of the academic year)* [online] Available from: <https://www.statistics.gr/en/statistics/-/publication/SED31/2017>. [Accessed 1 August 2023]
- [6] ELSTAT (Hellenic Statistical Authority). *Ships and Crews (Census) 2020* [online], Available from: <https://www.statistics.gr/el/statistics/-/publication/SMA12/2018>. [Accessed 1 August 2023]

- [7] ELSTAT (Hellenic Statistical Authority) (2023). Population-Housing Census results 2021. Available from: https://elstat-outsourcers.statistics.gr/Census2022_GR.pdf. [Accessed 1 August 2023]
- [8] EMSA. (2023). Seafarers' Statistics in the EU, Statistical Review. European Maritime Safety Agency. [Online] Available from: <https://www.emsa.europa.eu/newsroom/latest-news/item/4950-seafarer-statistics-in-the-eu-statistical-review-2021-data-stcw-is.html>. [Accessed 8 August 2023]
- [9] European Commission, Directorate-General for Mobility and Transport, (2022). *EU transport in figures : statistical pocketbook 2022*, Publications Office of the European Union. <https://data.europa.eu/doi/10.2832/216553>.
- [10] Fei, J., & Lu, J. (2015). Analysis of students' perceptions of seafaring career in China based on artificial neural network and genetic programming. *Maritime Policy & Management*, 42(2), 111-126. <https://doi.org/10.1080/03088839.2013.873545>.
- [11] Isari, F., & Pourkos, M. (2015). Qualitative Research Methodology, Applications in Psychology and Education. *Greek Academic Electronic Texts and Assistives*, 13.
- [12] Karageorgos, L. (2019, September 10). One out of two students leave the Merchant Marine Academies. *Naftemporiki*. Available from: <https://m.naftemporiki.gr/story/1513303/enas-stous-duo-spoudastes-egkatalaieptis-aen>. [Accessed 20 July 2023]
- [13] Katsounis, I., Lekakou, M., & Paradeisi, G. (2020). The identity of the Greek seafarer's wife. Attitudes and perceptions towards the seafaring profession. The case of Chios Island. *Pomorstvo, Scientific Journal of Maritime Research* 34(2), 223-232. <https://doi.org/10.31217/p.34.2.3>.
- [14] Leggate, H. (2004). The future shortage of seafarers: will it become a reality?. *Maritime Policy & Management*, 31(1), 3-13. <https://doi.org/10.1080/03088830310001642049>.
- [15] Marichev, I. V. (2018). CORRELATION BETWEEN THE DEMAND FOR SEAFARERS ON LABOR MARKET AND THE SUPPLY OF MARITIME EDUCATIONAL INSTITUTIONS. *ЭКОНОМИЧЕСКАЯ ТЕОРИЯ. ЭКОНОМИКА ТРУДА. УПРАВЛЕНИЕ ПЕРСОНАЛОМ*, 34.
- [16] Obando-Rojas, B. (1999). A system dynamic analysis of officer manpower in the merchant marine. *Maritime Policy & Management*, 26(1), 39-60. <https://doi.org/10.1080/030888399287050>.
- [17] Pappas, C. (2020). The attractiveness of the seafaring profession. The case of Greek shipping industry. Master thesis. Athens University of Economics and Business.
- [18] Thai, V. V., Balasubramanyam, L., Yeoh, K. K. L., & Norsofiana, S. (2013). Revisiting the seafarer shortage problem: the case of Singapore. *Maritime Policy & Management*, 40(1), 80-94. <https://doi.org/10.1080/03088839.2012.744480>.
- [19] Theotokas, I., & Progoulaki, M. (2007). Cultural diversity, manning strategies and management practices in Greek shipping. *Maritime Policy & Management*, 34(4), 383-403. <https://doi.org/10.1080/03088830701539198>.
- [20] Theotokas, I., Lekakou, M., Pallis, A., Syriopoulos, T. and Tsamourgelis, I., (2006). Greek Shipping Industry, Employment and Competitiveness, (Athens: Gutenberg) [in Greek].
- [21] Union of Greek Shipowners, (2023). Annual report 2022 – 2023. [Online] Available from: <https://www.ugs.gr/media/13819/annual-report-22-23.pdf>. [Accessed 10 August 2023].
- [22] United Nations Conference on Trade and Development. (2022). Review of Maritime Transport. [Online] Available from: https://unctad.org/system/files/official-document/rmt2022_en.pdf.