

<https://doi.org/10.31217/p.38.1.11>

Soft skills in the professional competence of specialists in the maritime industry

Vasyl Zheliaskov, Viktoriia Berezovska, Oksana Tymofyeyeva, Svitlana Chyzh, Liudmyla Turlak

Department of Humanities, Danube Institute of National University "Odessa Maritime Academy", 68607, Fanagoriyska Str, Izmail, Ukraine

ARTICLE INFO

Review article

Received 25 April 2024

Accepted 5 June 2024

Key words:

Seafarers
Soft skills
Emotional skill
Socio-psychological skills
Ship's crew
Stressors
Multiculturalism

ABSTRACT

The article considers the use of soft skills in the professional competence of maritime specialists and determines their value for the work of seafarers. The main soft skills required for maritime professionals were identified: attentiveness, teamwork skills, communication skills, responsibility, etc. A number of methods for the formation and further development of soft skills in maritime professionals have been identified, such as: studying in higher education institutions with maritime specifics, attending courses and trainings in the field of soft skills, studying on the basis of literature and video materials, contacting a coach or trainer, and combining several methods. The practical result of the study is a set of recommendations for improving the effectiveness of soft skills application in the professional competence of maritime specialists. The theoretical result was the identification of the main regularities of the use of soft skills in the professional competence of maritime specialists.

1 Introduction

The work of maritime specialists is extremely challenging, as it requires in-depth knowledge of their specialty, high professional skills, high moral qualities, courage and good physical and psychological strength. Seafarers work in changing geographical, meteorological and social conditions. People of different nationalities, religions, cultures and traditions are constantly on board in a confined space. This requires seafarers to have a developed sense of responsibility, calmness and perseverance, organizational skills, readiness to always help, internationalism, high culture, and professional skills (Bezlutska, 2020).

The seafaring profession is "one of the most intense, extremely difficult and dangerous professions, with special conditions that place special demands on the ship's crew" (Khomenko, 2021). Long-distance voyages are associated with a significant reduction in external social ties, constant stay in confined spaces, monotony of ac-

tivities, and an increased risk of accidents. The very notion of a maritime professional (seafarer) includes all employees on board a ship, every crew member, from the captain to the deckhand. A person who wants to work on a ship must have such skills that can be useful for the team at sea, whether it is a merchant or a navy – there are no unnecessary crew members on the ship, because everyone performs their functions (Odesa Regional..., 2023; IMO, 2010a).

The very principles of human performance for work at sea must be updated and researched, since it is no longer enough to know only the technical aspect of a job, such as the profession of navigator, which requires understanding simple algorithms for controlling a ship while performing a narrow-profile task in the age of technology, electronics, and modern innovations, without paying attention to behavioral elements (Studenikin et al., 2022). These principles are formed by previously acquired socio-psychological skills (soft skills), which makes the issue of studying soft skills in the profession-

al competence of maritime specialists and determining their value for the work of seafarers relevant. It is essential to develop the most employable talents, which include goal-setting, critical thinking, and resilience, from the point of view of employers (Janowiak, 2015).

States also place a great deal of value on the social and psychological competencies of seafarers since merchant marines play a major role in international trade and allow them to raise foreign exchange for more financial transactions. Up to 75% of Ukraine's foreign trade was carried out by sea before the Russian aggression against Ukraine (Logistics and International..., 2022). It has been possible to provide recommendations to improve the effectiveness of the application of soft skills methods in the professional competence of maritime specialists. The study has identified the main problematic issues of soft skills development in the professional competence of maritime specialists and determined their value for the work of seafarers. It was also determined which soft skills usage patterns were most common among ship crew members.

The following are the main gaps in research on the role of soft skills in the professional competence of maritime specialists: the importance of the socio-psychological skills of ship crew members was not analyzed; recommendations for enhancing the effectiveness of soft skills in the role of maritime specialists were not provided; the significance of stressors in the work of seafarers was not acknowledged; and the issue of the multiculturalism of the ship's crew was not brought up as an associated factor. This paper aims to fill in the identified gaps in order to create a more complete picture for future readers of this study. The study's primary drawback is the numerous gaps that were created as a result of the absence of data about the success rates of certain crews when they went on missions at sea.

Further research on this topic should include examples of the relationship between the success of crew members' actions and their use of soft skills. This will make it possible to compare the ideas proposed in the study to improve the use of soft skills with existing models of real foreign ship crews, which will make it possible to determine the effectiveness of the proposed ideas, and to recommend the best ones for practical implementation by the crews of domestic shipowners.

2 Literature review

The change that humanity has yet to realize is that skills are more important than knowledge, and highly professional skills are no more important than soft skills. Moreover, soft skills are not easily available. In the past, unemployed people could gain knowledge and specialized skills for relatively simple jobs within a few months, but the number of such vacancies is constantly decreasing, and the work of a maritime specialist has

never been considered simple. Learning new soft skills requires certain changes, when the human personality itself becomes a valuable tool (Miroshnikova, 2023). A characteristic feature of the maritime labor market is high competition among the rank-and-file crew of ships and a shortage of qualified command staff (Shapar & Shpilevaya, 2021; IMO, 2014).

Nagribelna's (2023) study aims to analyze the means of teaching professional vocabulary in the training of future maritime specialists in Ukrainian language classes using a combination of methods of analysis, synthesis, and generalization. It is determined that mastery of professional communication is impossible without knowledge of professional vocabulary and the ability to apply it appropriately in various communication situations. As an indication of a student-centered approach, Gummennikova's articles (2019; 2023) focus on how to modernize and implement educational changes in the traditional method of preparing future specialists in the maritime transport industry for professional activities and how to increase the leadership potential of future specialists in navigation and ship management in the context of professional training.

The main ways of updating and implementing educational changes are as follows:

- constant correction and amendments to the educational programs for training specialists in the maritime transport industry;
- formation of individual educational trajectories of cadets of higher education institutions of the transport maritime industry;
- the position of the continuity of the student's learning process and self-education throughout professional life.

Shvetsova's (2023) study analyzed the content of leadership competence and substantiated the need for communication skills for the professional activities of future shipbuilding and ship maintenance specialists. The study showed that the following abilities are prioritized in the development of leadership competence:

- diplomacy, developed public speaking skills, and persuasiveness;
- determination (stress resistance);
- responsibility and dedication;
- development of thinking (speed, logic, criticality).

The article also actualizes the need to improve the "soft" skills (soft skills) of seafarers, which is possible by introducing the author's special course and active forms of work aimed at developing leadership competence in maritime professionals into the educational process of higher education institutions. The scientific work of Morska (2020) presents an analysis of the current process of training technical specialists for professional foreign language interaction in Ukraine on

the example of future shipmasters. Based on the analysis, it was found that the theoretical developments, textbooks and teaching aids used by teachers and students of maritime universities today do not fully meet modern requirements.

The ideas of maritime experts on the sustainability of maritime education with the aim of closing the merger gap between maritime education and industry are shared by international scholars on the topic of soft skills in the professional competence of maritime professionals. The study found that in order to ensure quality standards in the education system, graduates, teachers and researchers should regularly update their educational standards to support relevant research, advanced technologies and their practical application. (Jeevan et al., 2022)

The main purpose of the article by Sharma & Kim, (2022) is to study the technical and non-technical competencies of navigators for autonomous shipping, and the tasks are:

- studying the applicability of the international convention on standards of training, certification and watchkeeping for seafarers;
- proposals for future technical and non-technical competencies that will be needed in the era of autonomous shipping.

The work of researchers James et al. (2018) addresses the issue of improving the knowledge of maritime terminology in English as a basis for maritime safety in the focus of teaching practice to improve maritime communication. The study found that maritime English fits into the category of a special form of English, as it has created, modified or adopted many terms and phrases from other languages. The article by Mallam et al. (2019) aims to discuss the concepts of virtual reality, augmented reality, and mixed reality applications specifically for maritime education, training, and operations, including the potential advantages, disadvantages, and limitations of these systems. It has been determined that soft skills (socialization, personal communication skills, evaluation) are important in navigation and work in complex socio-technical systems that require not only technical competence but also social skills.

Because of current developments in maritime technologies and the introduction of modern professional development programs, it is logical to consider the findings of the reviewed scientific studies and provide further recommendations for enhancing the effectiveness of the application of soft skills methods in the professional competence of maritime professionals, as seen through the lens of their own understanding of the relationship between soft skills and maritime business. The purpose of the study is to review the use of soft skills in the professional competence of maritime specialists and determine their value for the work of seafarers and to provide the recommendations for improving the ef-

fectiveness of the use of soft skills in the professional competence of maritime specialists.

3 Methodology

The following scientific literature was used in the course of the study: monographs, scientific and analytical publications by Ukrainian and foreign scholars on the subject matter under study, and the results of independent observations.

To solve the tasks of the study, a number of the following general scientific methods were used:

- monitoring method: it was used to collect, systematize and analyze information on the use of soft skills;
- comparison method: came in handy during the study of the roles of the ship's crew members and their comparison;
- method of abstraction: used in the course of the study to identify the main concepts and categories;
- methods of analysis and synthesis: used in the process of identifying the stages and factors of development, as well as the most influential elements of the object under study;
- the inductive method was used for the predictive analysis of the expected effectiveness of the use of soft skills by maritime industry specialists;
- abstract-logical and dialectical methods of scientific cognition, as well as the method of scientific abstraction, were used in the study to formulate theoretical generalizations, clarify the conceptual apparatus, and formulate conclusions;
- the method of specification is used to fix the effectiveness and feasibility of the proposed means for improving the effectiveness of soft skills methods in the professional competence of maritime industry specialists.

To solve individual tasks, the following groups of special methods were used: methods of information collection; methods of information processing; methods of analytical work; method of justification.

The main objectives of the study are as follows:

1. Explanation of the concept of soft skills.
2. Detection of the main soft skills.
3. Identification of the main elements of the specifics of the activities of specialists in the maritime industry.
4. Identification of the main soft skills necessary for the successful work of seafarers.
5. Identification of methods for the formation and further development of soft skills among specialists in the maritime industry.
6. Providing additional recommendations for improving the effectiveness of the application of soft skills in the professional competence of specialists in the mari-

time industry, through its own prism of the vision of the concept of soft skills and maritime affairs.

The fundamental nature of the study was determined by the following two features:

- research results can form the basis for new fundamental, applied, and exploratory research and development;
- the study has a broad theoretical basis and is in-depth.

The relevance of the topic under study is argued by the importance of soft skills in the professional competence of maritime specialists, since due to the Russian aggression against Ukraine, the volume of Ukraine's maritime exports has significantly decreased. It creates a need for seafarers to work for foreign shipowners to save their jobs, which in turn requires Ukrainian maritime specialists to meet all the necessary international standards, including a set of social and psychological skills. The object of the selected study is the process of reviewing the use of soft skills in the professional competence of specialists in the maritime industry, the subject is the principles of application of socio-psychological skills in the professional competence of seafarers.

4 Results

Soft skills are subjective, behavioral and socio-emotional competencies, also called "21st century skills", "key competencies", "generic competencies" and "core competencies" (Freitas & Almendra, 2022). They typically involve creativity, problem-solving, communication skills, empathy, and teamwork.

Soft skills are important, and they cannot be taught, since there is only a desire to learn and acquire them through personal experience in this form (Soft Skills You..., 2019; IMO, 2010b):

- through the own experience of difficult working situations, it is possible to master constructive communication;
- having gone through many working meetings where active listening was necessary – to be able to listen;
- after a large number of dialogues on mutual understanding in various types of work – the ability to negotiate.

Employers are now looking for workers with soft skills as they make workers more productive (Bhati & Khan, 2022).

Soft skills can be divided into three main groups (Rodriguez Martinez et al., 2021; Important Features..., 2019):

- instrumental soft skills;
- personal soft skills;
- system soft skills.

It is also important to mention the generally recognized soft skills, which can be considered a generalized version of all the above groups.

The division of different soft skills by main groups is given in Table 1.

Based on Table 1 a number of important conclusions about soft skills can be made:

- due to the large number of soft skills, no one person can master them all at a high level;
- for different fields of activity, it is necessary to have different sets of soft skills, since the relevance of teamwork skills and knowledge of foreign languages for different professions is completely different;
- some soft skills can replace each other, such as interpersonal skills and oral and written communication;
- the development of some soft skills may even be undesirable if they contradict work tasks.

Table 1 Division of soft skills into groups

No.	Instrumental soft skills	Personal soft skills	System soft skills	Generally recognized soft skills
1	Ability to analyze and synthesize	Teamwork	Autonomous learning	Managing and self-development
2	Ability to organize and plan	Interdisciplinary teamwork	Adaptation to new situations	Work and relationships with others
3	Oral and written communication	Work in an international context	Creativity	Communication
4	Knowledge of foreign languages	Intrapersonal skills	Leadership	Task management and problem solving
5	Computer skills	Interpersonal skills	Knowledge of other cultures	Application of mathematics
6	Ability to manage information	Recognition of multicultural diversity	Entrepreneurial spirit	Application of technologies
7	Problem-solving	Critical thinking	Motivation for quality	Application of design and creativity
8	Decision making	Ethics	Environmental sensitivity	

Source: based on (Clark, 2023; Qizi, 2020; Tessier, 2021; Marin-Zapata, 2022)

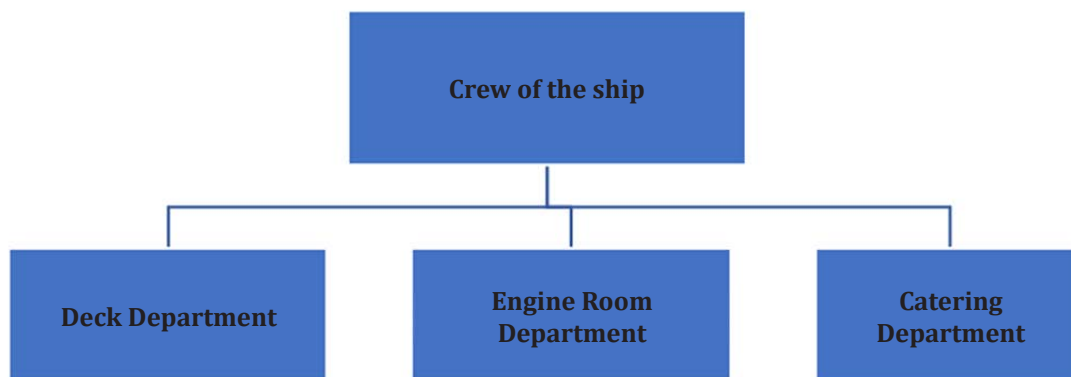


Figure 1 Division of ship's services by their tasks

Source: based on (Kramskyi, 2021; Orlova, 2023)

Also in 2020, the World Economic Forum identified the following skills needed in 2025 (The Future of Jobs Report, 2020):

- analytical thinking and innovation;
- active learning and training strategies;
- comprehensive problem solving;
- critical thinking and analysis;
- creativity, originality and initiative;
- leadership and social impact;
- use of technologies, monitoring and control;
- technology design and programming;
- stress resistance and flexibility;
- the ability to argue points of view, solve problems and generate ideas.

All these skills can be attributed to soft skills, which once again proves the importance of mastering them not only by specialists in the maritime industry, but also by everyone who wants to remain competitive in the labor market. Since soft skills are associated with teamwork, in order to determine the necessary social and psychological skills of a maritime specialist, it is necessary to consider him or her as a crew member performing a specific job and being exposed to stressors arising from specific working conditions.

The crew of a ship is a group of seafarers working in the same conditions, when the relations within the team are strictly defined:

- command hierarchy;
- code of conduct;
- rules and instructions of the shipowner or management company;
- staffing schedule.

The main principle in crew working relations is strict subordination, which ensures clear working relations and a system of subordination of the crew on

board the vessel in any situation. Along with the formal division, informal relationships arise between crew members on board and informal groups with their own leaders may form (Kostyria, 2020). A clear division of duties and responsibilities between all crew members ensures uninterrupted and accident-free operation of the vessel. A sea vessel is a type of vehicle, i.e., a device designed to transport people and/or cargo, as well as special equipment or mechanisms installed on it (Dopilko & Shcheholska, 2021). All crew members are required to perform general tasks, such as returning to the ship on time, preparing for border control, not consuming alcohol and drugs, and checking the integrity of the cargo. In addition, each service has its own tasks, for which it is solely responsible. The division of the ship's services by their main functions and activities is shown in Figure 1.

The deck crew is responsible for watchkeeping, mooring operations, loading, maneuvering, supplying and equipping the vessel, maintaining and painting the vessel, ensuring safety (including fire alarms and ship alarms), and using and maintaining electronic navigation equipment.

Engine room team members participate in the following activities:

- supervision and operation of the engine room according to the contract or order;
- maintenance and monitoring of equipment;
- ensuring the supply of spare parts.

The housekeeping service is responsible for the replenishment of provisions, cleanliness and compliance with hygiene requirements in the galley and pantries (Socio-psychological..., 2016). All crew members must act at all times in accordance with international and national requirements, rules of cargo transportation, ship maintenance and training and preparation of the crew to fight for its existence and integrity.

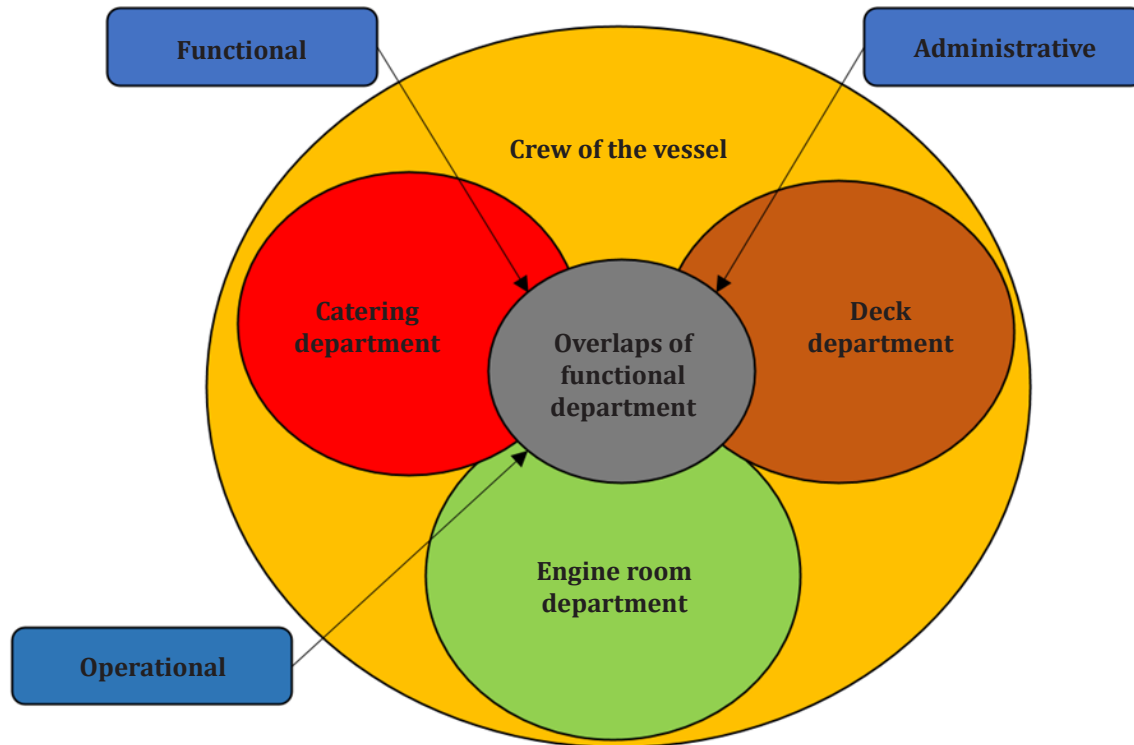


Figure 2 Interconnection of ship's services

It should be noted that there are three types of management on board: administrative, operational and functional. The first two of them are static, but the third one should be organized taking into account the crew's soft skills, as it is responsible for the most effective approaches to managing the ship's crew members. The main document that defines the functions of each individual maritime professional in the event of an emergency is the Muster list – a list of functions that each ship's crew member must perform in the event of critical events on board, as defined in Section III – Part A of the SOLAS Convention (Bhattacharjee, 2019).

Crew communication, as a combination of welfare services, engine room crew and deck crew, can be defined as a logical conjunction operation expressed by the formula:

$$DC \cap HS \cap MC = C \quad (1)$$

where DC is the deck crew, HS is the household service, MC is the Engine Room crew, and C is the crew. The connection of crew members to each other and to the mentioned crew, according to the formula described earlier, is shown in Figure 2.

As defined in Figure 2 the way that the ship's teams interact with one another demonstrates that success is impossible without the cooperation of the entire crew because each team's work not only depends on the

ship's functionality but also on the other teams' work. It is worth mentioning the duplication of command departments in terms of administrative, operational, and functional connections. It is also necessary to mention the impact of innovations in the field of maritime transportation and delivery on the specifics of the work of the ship's crew. There are many other kinds of innovations, such as technological ones, but the most popular one is crew optimization, which is essentially decreasing the overall number of crew members by giving seafarers access to a variety of activities that are not usual for them. All this leads to the following consequences:

- increase in the number of necessary soft skills for specialists in the maritime industry;
- a general increase in the workload for all seafarers;
- desirable crew members are those who have several specialties.

To better understand what soft skills are needed in today's environment, maritime professionals need to identify and analyze the implications of optimizing ship crew members. This will make it possible to identify the threats and disadvantages of such innovations and their impact on stressors, which can be considered as one of the elements on the basis of which the soft skills of a maritime specialist as a crew member of a ship are determined. The consequences of the introduction of numerous innovations in shipping are shown in Figure 3.

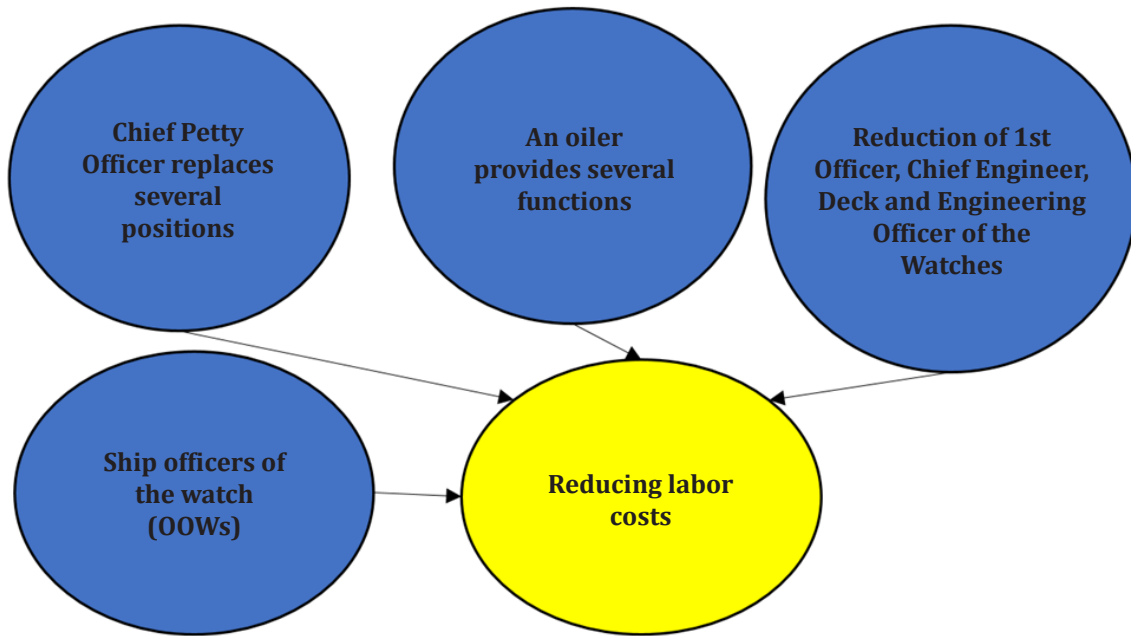


Figure 3 Linking the components of maritime innovation and cost reduction

According to Figure 3 it is clear that the main goal of technological innovation in maritime is to reduce costs, although it has a number of disadvantages that create additional threats to the crew:

- fatigue of crew members from the requirements to perform several types of work;
- a drop in the quality of tasks performed due to the lack of special education;
- reducing the number of crew members increases the complexity of maintaining the integrity of the vessel and cargo.

Seafarers’ fatigue leads to an increase in the role of stressors in their work on a ship. A stressor is one of the environmental or personal factors, whose effect spoils the physiological and mental functions of a person, contributing to the formation of stress. It is necessary to consider groups of stressors and specific situations that cause stress to ship crew members. Such a review will make it possible to identify relevant soft skills that help to overcome major stressful situations and continue to work productively despite problems. Various stressors determine the specifics of the work of the ship’s crew, since the work of maritime specialists is associated with a large number of specific conditions (Figure 4).

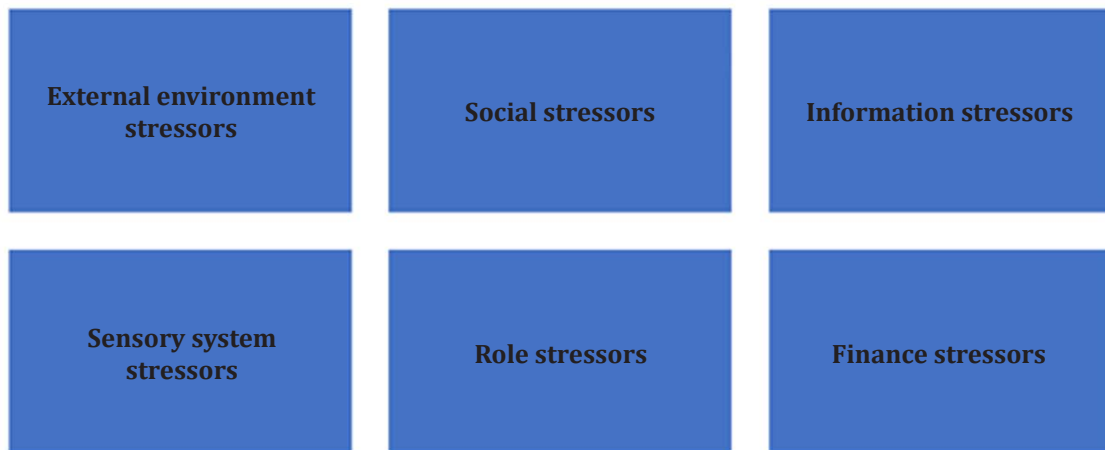


Figure 4 Groups of stressors of maritime industry specialists as crew of a sea vessel

Table 2 The main situations that cause stress in *seafarers*

No.	Name of the stressor group	Essence
1	External environment	Bad weather conditions, being in an internal environment
2	Socialization	Loneliness and monotony of work, lack of leisure time, a large number of cultures and religions among crew members
3	Information	Inability to obtain information and restriction of the circle of communication
4	Sensory system	Intense anxiety and constant isolation
5	Role	Inability to be a family member
6	Finances	Non-payment of salaries, the possibility of being left without a job

Source: based on (Markova & Kosenko, 2020; Novikova, 2021)

Each group of stressors consists of specific situations. The main situations among the groups of stressors are described in Table 2.

One of the most important factors in the work of a maritime specialist as a crew member of a ship is multiculturalism, as it requires the use of special soft skills. Multiculturalism is a common feature of any vessel (Buzovska, 2020), as the crew often consists of a large number of representatives of different religions and cultures, and soft skills should be used to prevent intercultural problems.

The following soft skills can be used to help seafarers work successfully and overcome social, informational, and role stressors:

- stress resistance: used to combat the impact of stress caused by harsh working conditions;
- teamwork skills: helps to perform tasks efficiently and minimize the threats from constant stay at sea;
- initiative: allows to offer better ways to solve tasks or problems of specific team members;
- adaptation to new situations: it is extremely important for a maritime specialist to adapt to changing environmental factors or working moments;
- knowledge of foreign languages and cultures: makes it possible to avoid conflicts and communicate better with colleagues during work;
- technical literacy: the change in shipping technologies requires a willingness to constantly improve knowledge of working with the ship's equipment and mechanisms;
- ability to lead: the characteristics of a seafarer's job include having the leadership skills necessary to

guide the group in the case that the ship's captain or other officers pass away, this will ensure that the crew survives and completes the mission at hand;

- readiness to learn: manifested in self-improvement through the acquisition of new knowledge and experience, the possibility of their further analysis and synthesis.

Methods for the formation and development of soft skills include studying at higher education institutions with maritime specifics, attending soft skills courses and trainings, studying based on literature and video materials, contacting a coach or trainer, and combining several methods. For each crew member, depending on his or her functions, the required set of soft skills can change quite dramatically, as it is determined by the formal and informal place of the maritime specialist in the hierarchy of the ship's crew and the physical capabilities of his or her body. Methods of assessing a seafarer's soft skills differ depending on his or her place of work. In the shipping company, they receive a theoretical assessment based on tests, questionnaires and interviews. On board the vessel, the main assessment is based on the seafarer's performance in performing tasks.

As can be seen from Table 3, the component composition of the concept of "competence of naval officers" is variable and differs significantly in terms of internal content. Thus, among scientific approaches, there is no single approach to defining the essence of the studied concept. The author identifies the components of the concept of "competence of naval officers" which are often found in the works of Ukrainian and foreign scholars under consideration.

Table 3 Components of the concept of "competence of naval officers"

No.	Components	Посилання на авторів
1	Soft skills (K1)	(Bezlutska, 2020; Markova & Kosenko, 2020; Novikova, 2021)
2	Technical and non-technical competencies (K2)	(Sharma & Kim, 2022)
3	Maritime education (K3)	(Mallam et al., 2019; Stovba, 2023)
4	Leadership in the crew (K4)	(Kostyria, 2020; Kramskyi, 2021)

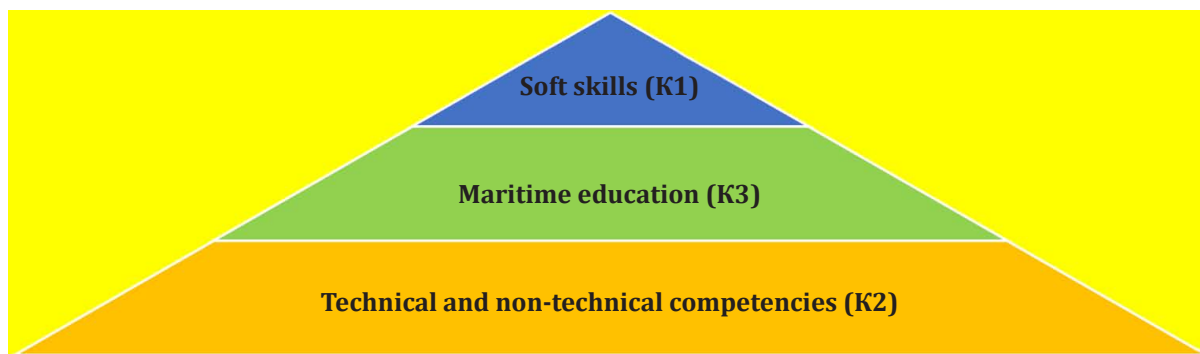


Figure 5 Components of the concept of “competence of naval officers”

The next stages of content analysis involve identifying the number of mentions and counting them for each component.

Depending on the number of mentions of the previously identified components in the analyzed sample, each of them was assigned corresponding ranks, as shown in Table 4, Table 5, Table 6, Table 7.

Table 4 Correlation between the number of mentions and the rank of components of the concept of “soft skills”

No.	Component rank	Number of mentions
1	(K1)	4
2	(K2)	2
3	(K3)	3
4	(K4)	1
Total number of mentions: 10		

Table 5 Correlation between the number of mentions and the rank of components of the concept “technical and non-technical competencies”

No.	Component rank	Number of mentions
1	(K1)	1
2	(K2)	3
3	(K3)	2
4	(K4)	1
Total number of mentions: 7		

Table 6 Correlation of the number of mentions and rank of components of the concept “maritime education”

No.	Component rank	Number of mentions
1	(K1)	1
2	(K2)	2
3	(K3)	4
4	(K4)	2
Total number of mentions 9		

Table 7 Correlation between the number of mentions and the rank of components of the concept “crew leadership”

No.	Component rank	Number of mentions
1	(K1)	1
2	(K2)	0
3	(K3)	1
4	(K4)	2
Total number of mentions 4		

Taking into account the data of Table 4, Table 5, Table 6, Table 7, the main components were selected (by frequency of mention) and the component composition of the studied concept was determined (Figure 5), which is the last stage of content analysis – interpretation of the results regarding the main goal (definition of the concept).

5 Discussion

Although the topic of the use of soft skills in the professional competence of maritime specialists has gained popularity among foreign and Ukrainian researchers, none of the sources reviewed have been disclosed in such a volume and in such a holistic manner. Also, no recommendations have been identified to improve the effectiveness of the application of soft skills methods in the professional competence of maritime industry specialists, which could be used in practice for the activities of seafarers and domestic shipowners. The main reasons for this situation are several factors:

1. The lack of an explicit link between the goals and objectives of the study of the use of soft skills in the professional competence of maritime specialists.
2. The poor theoretical basis of some studies does not allow them to assert their universal nature due to the large number of potential gaps.
3. Obsolescence of some of the materials used.
4. Despite the existence of research on seafarer’ stress factors, there are no soft skills proposed to offset

their negative impact on the ship's crew (Bezlutska, 2020; Markova & Kosenko, 2020).

At the same time, some studies of the use of soft skills in the professional competence of maritime specialists demonstrate unique ideas:

- technical and non-technical competencies of navigators for autonomous navigation were studied (Sharma & Kim, 2022);
- maritime education and training in the digital era was reviewed (Mallam et al., 2019);
- a leadership strategy in the multinational crew has been formed (Kostyria, 2020);
- the issue of crew formation by crewing agencies is considered (Kramskyi, 2021);
- the reaction of the seafarer's body to the modeling of professional activity was studied (Novikova, 2021)

One study (Stovba, 2023) also proposes the creation of a specific table of methods for the formation, education and improvement of the basic soft skills of future naval officers in higher education institutions.

Based on the study, the following recommendations can be made to improve the effectiveness of the application of soft skills in the professional competence of maritime specialists:

- to conduct a study of potential stressors during the sailing;
- to make preliminary calculations of the resources required to put the vessel to sea;
- to study the characteristics of the team: its composition, culture and religion;
- to identify the main risks to the successful operation of the vessel;
- to assess the importance of the physical and mental state of each seafarer;
- to examine availability of competent specialists: trainers, mentors, coaches;
- shipping companies may consider, plan and provide courses and training to contribute development of soft skills of the ship crew;
- to create a strategy to develop competencies of crew to reach better soft skill competency and basic ideas for their deployment on board.

Only active practice on a real vessel with conditions close to everyday life can help a maritime specialist to practice soft skills. A shipowner should add several seafarers to experienced teams, where the captain and officers are able to mentor and explain their actions, as well as those of other crew members, to newcomers. If the shipowner or educational institution, has such financial capabilities, it is possible to organize training voyages, where routine problems of working in isolation, loneliness and bad weather conditions, and the cultural diversity of the crew will be encountered. Edu-

cational institutions may assist the development of the soft skills of seafarers including soft skill development and assessment procedures in their academic program. The training and drill scenarios used on board also contains inputs to develop and soft skills of the crew.

6 Conclusion

Thus, the study considers the use of soft skills in the professional competence of maritime specialists and determines their value for the work of seafarers. Generally recognized soft skills were mentioned, which are often important in the work of maritime professionals, types of management on board, and the Muster list (a list of crew member functions). The main soft skills that are necessary for the work of maritime professionals are identified and explained, namely: attentiveness, teamwork skills, communication skills, responsibility, leadership ability, and stress resistance.

The main groups of stressors for ship's crew members are identified and their essence is revealed in the form of specific problems and inconveniences of living and working in the marine environment. A number of methods for the formation and further development of soft skills among maritime industry professionals are highlighted. The basics of work on a ship and the distribution of crew members by function are investigated. It has been determined that the set of soft skills required for maritime professionals can change rapidly and dramatically, as it is determined by the formal and informal place of a maritime professional in the hierarchy of the ship's crew and the physical capabilities of his or her body. Also, the methods of assessing soft skills in the shipping company and on board were clarified: in the company – based on tests, interviews, questionnaires, and on board – during real tasks. A number of additional recommendations are provided to increase the effectiveness of the application of soft skills methods in the professional competence of maritime specialists, through their own prism of vision of the concept of soft skills and maritime business.

Further research on this topic should highlight real-life examples of shipowners in the United States, China, and EU member states in the context of their seafarers' use of soft skills. Also, in the following studies, it is necessary to consider the issue of interaction between Ukrainian and foreign maritime specialists and to offer tools for such cooperation in the form of specific soft skills, which will make it possible to overcome the problems of differences in cultures, religions and mentality and create new prospects for cooperation while working on a ship.

Funding: The research presented in the manuscript did not receive any external funding.

Author Contributions: Vasyl Y. Zheliaskov: Visualization, Formal analysis; Viktoriia V. Berezovska: Project administration, Software, Methodology; Oksana Tymofeyeva: Writing - Original Draft, Conceptualization, Validation; Svitlana Chyzh: Investigation, Resources, Software; Liudmyla P. Turlak: Writing - Review & Editing, Supervision, Data Curation.

References

- [1] Bezlutska, O. P. (2020). Mental stability of future *seafarers* as a basis for readiness to work in extreme situations. *Pedagogy of Formation of Creative Personality in Higher and General Education Schools*, 71(2), 43-46.
- [2] Bhati, H. & Khan, P. (2022). The Importance of Soft Skills in the Workplace. *Journal of Student Research*. <https://www.jsr.org/hs/index.php/path/article/view/2764>.
- [3] Buzovska, Yu. F. (2020). *Preparation of future navigators for intercultural communication by means of information and communication technologies*. Odesa: K. D. South Ukrainian National Pedagogical University named after K. D. Ushynsky.
- [4] Clark, K. J. (2023). *Global Experiences and Perceived Leadership Skills in Extension: An Instrumental Case Study*. Lincoln: The University of Nebraska-Lincoln.
- [5] Dopilko, V. O. & Shcheholska, K. O. (2021). Definition of the concept of «vessel» in accordance with international and national regulations. *Scientific Bulletin of Uzhhorod National University*, (67), 307-312. <https://doi.org/10.24144/2307-3322.2021.67.58>.
- [6] Freitas, A. P. & Almendra, R. (2022). Teaching and learning soft skills in design education, opportunities and challenges: a literature review. In *Proceeding of International Conference Senses & Sensibility* (27 November 2022, Cham) (pp. 261-272). Singapore: Springer. https://doi.org/10.1007/978-3-030-86596-2_20.
- [7] Gumennikova, T. (2019). Ways to improve the continuous training of maritime transport industry specialists in the context of educational changes. *Bulletin of the National Academy of the State Border Guard Service of Ukraine*, (5), 1-17. <https://periodica.nadpsu.edu.ua/index.php/ped-visnyk/article/view/338/338>.
- [8] Gumennikova, T. (2023). Development of the leadership potential of future specialists in navigation and ship management in the conditions of professional training as a sign of a student-centered approach. *Bulletin of Science and Education*, 10(16), 1-16.
- [9] IMO (2014). International Convention for the Safety of Life at Sea, 1974. [https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\)-1974.aspx](https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS)-1974.aspx).
- [10] IMO. (2010a). STCW Code including the Manila Amendments to the Seafarers' Training, Certification and Watch-keeping (STCW) Code. <http://www.imo.org/en/OurWork/HumanElement/TrainingCertification/Documents/34.pdf>.
- [11] IMO. (2010b). International Safety Management Code. <http://www.imo.org/en/Publications/PublishingImages/PagesfromEB117E.pdf>.
- [12] Important Features of Muster List on Ship. (2019). <https://www.marineinsight.com/maritime-law/important-features-of-muster-list-on-ship/>.
- [13] James, A. J., Schriever, U. G., Jahangiri, S., & Girgin, S. C. (2018). Improving maritime English competence as the cornerstone of safety at sea: a focus on teaching practices to improve maritime communication. *WMU Journal of Maritime Affairs*, 17, 293-310. <https://doi.org/10.1007/s13437-018-0145-4>.
- [14] Janowiak, A. (2015). How Elon Musk Succeeded with Soft Skills. <https://www.conovercompany.com/how-elon-musk-succeeded-with-soft-skills/>.
- [15] Jeevan, J., Othman, M. R., Mohd Salleh, N. H., Abu Bakar, A., Osnin, N. A., Selvaduray, M., & Boonadir, N. (2022). Interpretations of maritime experts on the sustainability of maritime education: Reducing the Lacuna of Amalgamation Between Maritime Education and Industries. *Design in Maritime Engineering*, 167, 339-357. https://doi.org/10.1007/978-3-030-89988-2_26.
- [16] Khomenko, T. M. (2021). *Psychological analysis of professional crisis in maritime professions*. Kherson: Kherson State University.
- [17] Kostyria, O. V. (2020). Leadership in a multinational crew: requirements of an international maritime organization. *Yurydychnyi Visnyk*, 122-127. <https://doi.org/10.32837/pyuv.v0i4.635>.
- [18] Kramskyi, S. O. (2021). Management of crewing projects by crewing agencies. *Legal and Socio-Economic Aspects of Strategic Development of the Region and Territorial Communities*, 29-36. https://chern.maup.com.ua/wp-content/uploads/2021/04/zbirnik_2021_international_final_5.pdf.
- [19] Logistics and international trade in Ukraine during the war. (2022). <https://www.apk-inform.com/uk/events/1527142>.
- [20] Mallam, S. C., Nazir, S., & Renganayagalu, S. K. (2019). Re-thinking maritime education, training, and operations in the digital era: Applications for emerging immersive technologies. *Journal of Marine Science and Engineering*, 7(12), 428.
- [21] Marin-Zapata, S. I., Román-Calderón, J. P., Robledo-Ardila, C., & Jaramillo-Serna, M. A. (2022). Soft skills, do we know what we are talking about? *Review of Managerial Science*, 16(4), 969-1000.
- [22] Markova, M. V. & Kosenko, K. A. (2020). Analysis of the state of mental health and the level of psychosocial stress in representatives of the command and staff of the merchant marine. *Journal of Marine Medicine*, 1 (86), 28-36.
- [23] Melnyk, O. M. & Bychkovsky, Y. V. (2021). Taking into account the stress factor in the system of ensuring maritime safety. *Scientific Notes*, 32 (71), 252-256.
- [24] Miroshnikova, A. (2023). Skills of the future megatrends in education by 2035. <https://osvitoria.media/experience/doslidzhennya-chomu-osobystist-staye-tsinnym-instrumentom/>.
- [25] Morska, L. (2020). Characterization of the process of professional training for communicative interaction of technical specialists. *Language: Codification, Competence, Communication*, 1(2), 21-31.
- [26] Nagribelna, I. A. (2023). Means of teaching professional vocabulary in the training of future maritime specialists in Ukrainian language classes. *Collection of scientific works "Pedagogical Sciences"*, (101), 62-66. <https://doi.org/10.32999/ksu2413-1865/2023-101-10>.

- [27] Odesa Regional Employment Center. (2023). My profession is a seafarer. Retrieved from <https://ode.dcz.gov.ua/publikaciya/moya-profesiya-moryak>.
- [28] Orlova, N. G. (2023). On the qualifications of crew members of ships. In *Proceeding of the 9th International Scientific and Practical Conference "Scientists and existing problems of human development"* (14-17 November, 2023, Zagreb) (p. 120). New York: International Science Group.
- [29] Qizi, K. N. U. (2020). Soft skills development in higher education. *Universal Journal of Educational Research*, 8(5), 1916-1925.
- [30] Rodriguez Martinez, A., Sánchez, V. S., Falcon Linares, C., & Latorre Cosculluela, C. (2021). Key soft skills in the orientation process and the level of employability. *Sustainability*, 13(6), 3554.
- [31] Shapar, L. & Shpilevaya, T. (2021). Competition of Ukrainian seafarers in the global labor market. *Scientific Notes of Berdyansk State Pedagogical University*, (1), 80-88. <https://doi.org/10.31494/2412-9208>.
- [32] Sharma, A. & Kim, T. E. (2022). Exploring technical and non-technical competencies of navigators for autonomous shipping. *Maritime Policy & Management*, 49 (6), 831-849.
- [33] Shvetsova, I. (2023). Integration of extracurricular activities into the process of forming the leadership competence of future specialists in navigation and management of ships. *Perspectives and Innovations of Science*, 15(33), 556-564.
- [34] Shvetsova, I. (2023). The significance of communication skills in the formation of leadership competence of future specialists in navigation and management of ships. *ScienceRise: Pedagogical Education*, 5(56), 11-16.
- [35] Social and Psychological Foundations of Leadership (2016). <https://studfile.net/preview/5648309/>.
- [36] Soft Skills You Need to Succeed When Entering the Workforce (2019). <https://www.forbes.com/sites/forbescoachescouncil/2019/01/22/15-soft-skills-you-need-to-succeed-when-entering-the-workforce/?sh=7f1c804210ae>.
- [37] Stovba, T. (2023). Formation of soft skills of naval officers in the context of modernity and design of the future. *Topical Issues in Modern Science*, 10(16), 90-102. [https://doi.org/10.52058/2786-6300-2023-10\(16\)-90-102](https://doi.org/10.52058/2786-6300-2023-10(16)-90-102).
- [38] Studenikin, D. E., Poganeva, E. V., & Skorodumova, E. A. (2022). Assessment of The Seaman's Soft Skills Condition. *European Proceedings of Social and Behavioural Sciences*, 125(1), 268-274.
- [39] Tessier, V. (2021). A model for learning teamwork skills. In *Proceedings of the 23rd International Conference on Engineering and Product Design Education*, (9-10 September 2021, Herning) (pp. 1-6). Singapore: Design Society.
- [40] *The Future of Jobs Report 2020*. (2020). <https://www.weforum.org/publications/the-future-of-jobs-report-2020/in-full/executive-summary/>.
- [41] Volkova, O. O. (2024). Coping behavior of seafarers under conditions of uncertainty and risk. *Perspectives and Innovations of Science*, 1 (35), 859-869. [https://doi.org/10.52058/2786-4952-2024-1\(35\)-859-869](https://doi.org/10.52058/2786-4952-2024-1(35)-859-869).