

Applying Soft Skills in Maritime Domain for Effective Workforce Creation*

Anna Karadencheva[†], Valeri Stoyanov,
Boyan Mednikarov, Siyana Lutzkanova

Abstract: The study identifies soft skills as the most strongly stated need for quality career development in the maritime domain of the Republic of Bulgaria. This leads to our attempt to bring out the specific elements that are shaping these skills, visually represented in a Conceptual Model of Professional Maritime Soft Skills. This model describes the specific “DELTA talents”, which are shaping the necessary soft skills, in order to expand the way for achieving an effective workforce creation in the maritime domain. The article presents the empirical results of 50 online surveys with specifically targeted organizations in the maritime sector of the Republic of Bulgaria. Based on the obtained results, twelve main soft skills were synthesized in four categories and in addition six core DELTA talents were identified as specific ingredients that are shaping the soft skills and the connections between them. The proposed model is applicable for soft skills educational and training development of the maritime human resources.

Keywords: Soft skills, Human resources, Maritime domain, Maritime education, DELTA talents.

1. Conceptual Framework of the Study

The maritime industry is becoming smart and sustainable, and in this process, a different set of skills is needed that is more human-centered rather than technical. Nowadays, studies have repeatedly shown that organizations with a critical mass of workforce that possess some of these specific human-oriented abilities perform better and actually are more profitable [1], [3], [4], [7].

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[†] Corresponding author

Likewise, managerial, leadership, decision-making positions and roles in this new maritime era require appropriate competence, knowledge, attitudes and most importantly *soft skills* [8] that are rather cognitive than practical, increasingly involving the use of logical, intuitive, and creative thinking, instead of dexterity or other learned hard skills [5], [6], [9].

The possession of these soft skills advantages is forming the maritime human resources capital as different as a model of behavior and adaptivity, as a style of decision-making, as openness and empathy to the world and the new, but above all - as an ability to effectively interact in a diverse social environment with a diverse category of people, where the Triad – Physical Condition, Mental State and Professional Environment is in continuous interaction [14].

To achieve sustainability and continue being successful, the maritime industry needs to admit, consider and use precisely these advantages by workforce development, educational and training enhancement and general improvement of human resources capabilities in the water-based blue economy. The topic for social management, in addition to its current presence, it has a long historical legacy. The study of historical concepts as well as the development of more modern one's perceptions allows to trace both the genesis and the evolution of the idea, to "illuminate" additional topics and perspectives [10], [11], [13], [16].

To accomplish these aims, it is necessary to identify the main needs for additional development of human-centered skills and competences, the so called soft skills, necessary for the construction of full-fledged maritime personnel, in view of the specifics of the professional implementation and the needs of the blue economy sectors.

2. Methodology

The main goal of the study is to synthesize a conceptual model of soft skills that meets the current dynamic needs of the maritime domain and lead to progressive career development.

The main tasks of the research are:

- 1) To measure the necessity of soft skills possession of the human resources in the maritime sector.
- 2) To identify the specific soft skills needed for effective professional realization in the maritime sector.
- 3) To propose a conceptual model of professional soft skills in maritime domain.

In order to achieve this aim, we use the methodology of quantitative analysis in the form of 50 online surveys conducted by Google Forms with specific target organizations in the maritime sector.

The subjects surveyed are representatives of maritime organizations and associations, as follows: port operations and services (15%), maritime education (28%), government and regulatory organizations (26%), ship repair, shipbuilding and ship owners (10%), crew recruitment and training agencies (15%), IT hardware, software and electronic equipment (6%).

The questionnaire consists of 6 questions, which can conditionally be grouped into three categories: 4 questions concerning the individual-demographic data - gender, age, education, operating sector of the company in which they are employed. The first three questions are structured and the last question is semi-structured. The use of a semi-structured question reveals the attitude of the interviewed towards the role of different education, skills and competences - technical and soft skills - for a successful career in the maritime domain. 6 categories are structured with possibility for them to be further supplemented. The hidden intention is to "measure the weight" of soft skills in the ensemble of skills and competencies for a successful career, according to the experts. The last semi-structured question is related to uncovering the set of soft skills required for a successful career in the maritime domain. In the structured part of the question, 9 categories of soft skills are specified and an opportunity is given for describe additional one.

Last but not least, this paper proposes the hypothesis that the development of soft skills creates a more competitive workforce in the maritime domain.

3. Online Survey Findings

The age distribution of the examined persons (Figure 1) is as follows: 18-25 y.o. (31%), 25-30 y.o. (25%), 30-40 y.o. (27%), 40-50 y.o. (10%) and 6% are over 50 y.o.

As next, the level of education of the respondents should be presented (Figure 2) as follows: 49% of the respondents possess postgraduate (Master degree or higher) education, 32% hold a university degree and 19% of them are learning at universities in the moment.

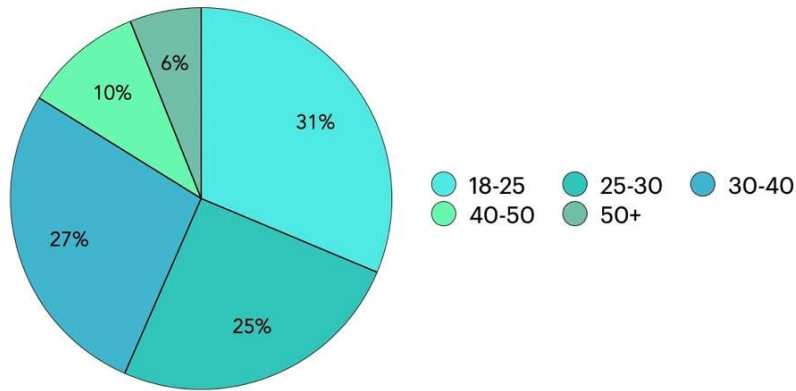


Fig. 1 – Age distribution of the respondents in the survey.

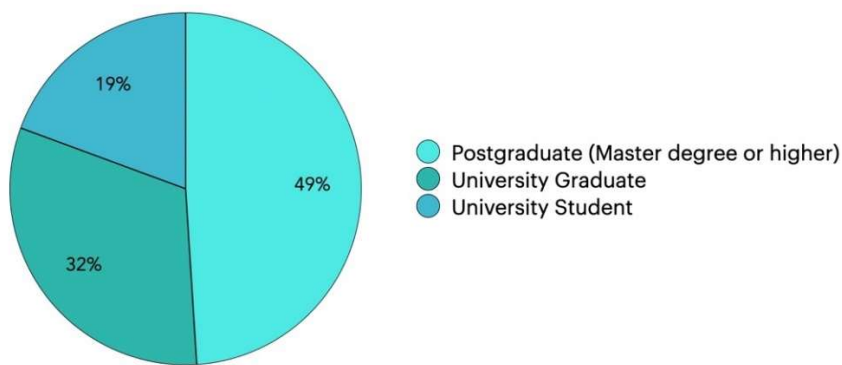


Fig. 2 – Educational level owned by the respondents in the survey.

In order to gain a deeper understanding about the necessary skills for a quality implementation and career development in the maritime domain, the respondents were asked the question "Which do you consider as key skills for being successful in the maritime domain?" (Figure 3).

According to the results, 87,5% of the respondents indicate that the possession of soft skills is the most important, fundamental need for workforce in order to achieve successful career development in the maritime sector. Language skills (75%) and analytic skills (68,7%), including research, data engineering, reporting and data metrics are identified as next situated demands.

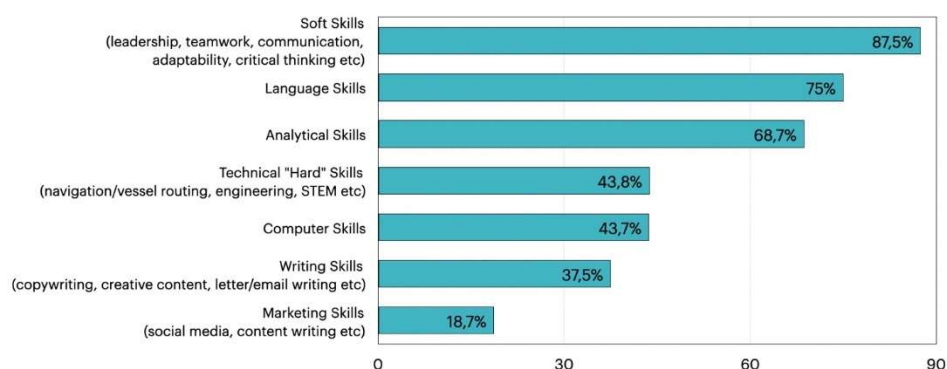


Fig. 3 – Number of mentions of required key abilities in the question "Which do you consider as key skills for being successful in the maritime domain?"

Interesting result is the position of the technical, so called "hard skills", such as navigation/vessel routing, engineering, STEM etc., in the fourth place as stated need (43,8%), which actually take over a central part in the current, accepted system of maritime education on a national level.

Last but not least in the line of necessary skills for being successful in the maritime industry the interviewed persons reveal writing skills (37,5%), more precisely copywriting, creative content, letter/email writing and the marketing skills (18,7%), including social media management and content writing.

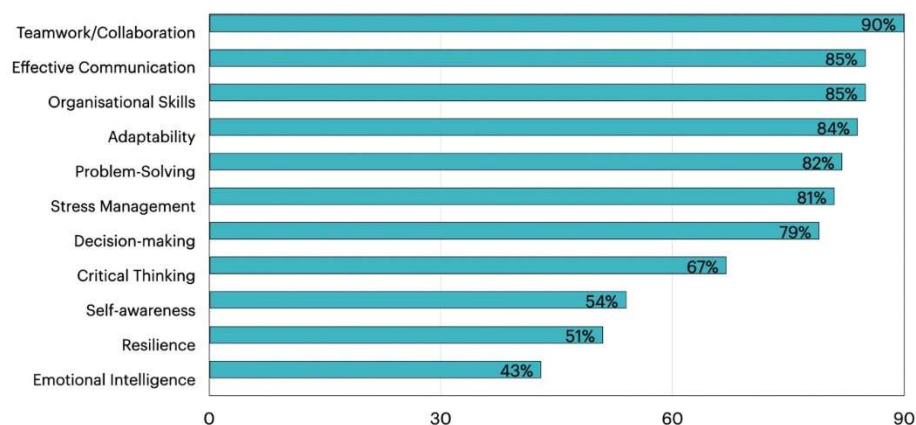


Fig. 4 – Number of answers of the required human skills in the question "What are the main "human" skills needed for effective career development in the maritime industry and other blue sectors?"

To gain a deeper understanding of the specifics of the first and highest-ranking need, the possession of soft skills, it is necessary to achieve a thorough understanding of the interpretation on "soft skills" concept among maritime professionals. In this direction, the interviewed persons were asked the question: "What are the main "human" skills needed for effective career development in the maritime industry and other blue sectors?" (Figure 4).

Our study shows that the understanding of soft skills concept among maritime specialists is interpreted mostly as a possession of evolved personality competence in the fields of teamwork (90%), effective communication (85%), organizational skills (85%), adaptability (84%), problem-solving (82%), stress management (81%), decision-making (79%) and critical thinking (67%). Self-awareness (54%), resilience (51%) and emotional intelligence (43%) are the next most needed skills.

By themselves, these results outline the specific abilities that should be enhanced during the process of education and proficiency trainings on a national level. Actually, they can be categorized and summarized in three main academic areas: social skills, psychological skills and management skills.

It is necessary to have in mind that this enhancement should be adjusted to one specific, disposable characteristic of maritime profession – the ability to work with wide variety of people. This forms the guidelines for additional development in terms of intercultural competence [12], social sense, better communication and qualitative knowledge about the human nature and psychological types.

4. Conceptual Model of Professional Maritime Soft Skills

Our study identifies soft skills as the most strongly stated need for quality career development in the maritime domain, which naturally leads to our attempt to bring out the specific elements that are shaping these skills, visually represented in a conceptual model (Figure 5).

The conceptual model is a synthesis of the ideas for the distribution of the soft skills into four categories, as this has been done in the COMPETE Soft Skills Framework [20], but substantively these four categories reflect the specificity of career requirements in the maritime domain, according to the results of our own empirical study and are reflected in Figures 3 and 4.

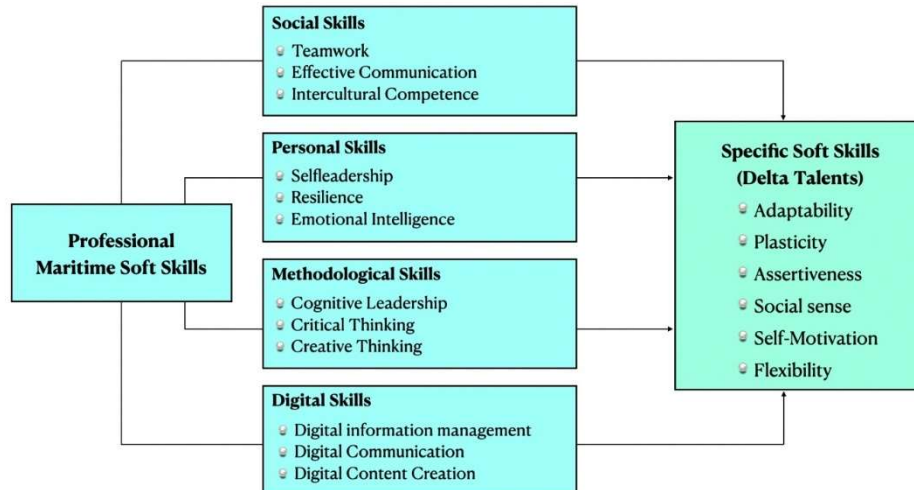


Fig. 5 – Conceptual Model of Professional Maritime Soft Skills.

Based on an analysis and synthesis of the empirical results, including a content analysis of the open descriptions of the interviewed experts and taking into consideration the idea about the so-called “DELTA talents” (Distinct Elements of Talent) [7], from the four groups of soft skills are synthesized 6 categories of delicate talents which can be described as a mix of skills and attitudes. An operational description of the soft skills also creates possibilities for taxonomy of the objectives in a training.

These DELTAs are *Adaptability*, *Plasticity*, *Assertiveness*, *Social Sense*, *Self-Motivation* and *Flexibility*.

Adaptability is a significant determinant for the smooth running of group relationships and collective goals in the maritime sector. It is not by chance that it is a central concept in evolutionary theory. In the Blue sector, adaptability conditions capacities for elasticity, agility, flexibility, as well as identification with the environment and the group, forming an identity with the organization and its goals [12], [23].

In the maritime domain, adaptability is perhaps the most malleable soft skill. It should be seen above all as a skill for translating knowledge in different contexts and applying it in different situations. In this line of thinking, adaptability requires developed abilities to learn from the environment and people, open-mindedness, perception of different perspectives, positive psychological attitude and creative thinking, through which adaptation to the

environment and people takes place faster and easier, which also is corresponding to the stress resilience of the personality.

Furthermore, it is necessary to mention some other aspects of adaptability in the maritime sector, such as the continuous acquisition of new digital skills, constant evolving knowledge in the field of the English language and the ability to adapt to multicultural environment, which is called intercultural competence [12], [15].

The DELTA talent *Plasticity* describes the manifestation of flexibility, mobility, adaptability and effective interaction in different situations, with different categories of people.

The possession of this talent is revealed in the process of communication at different levels, in the form of elasticity and adaptation to the specifics of the relevant person or situation and is very important part of the effective teamwork. This includes a delicate sense of the required approach to communication, parameters of the vocabulary to be used, the required level of distance and formality of communication, as well as the use of appropriate body language [19], [21].

The mastery of this plasticity of communication, actually forms the next DELTA talent that is needed in order to achieve a quality career development in the maritime sector – the so-called *assertiveness* [2].

Assertiveness is a DELTA talent expressed in the ability to assert oneself and assert one's personal position and rights by respecting the thoughts and wishes of others. An assertive person clearly communicates his wishes and sets boundaries, but does not issue orders to other people and does not attack if his demands are not met.

At its core, assertiveness is constructed from the skills of correct argumentation, an ethical code of communication and emotional self-regulation.

Assertiveness is a building block in the development of teamwork, communication, management and conflict resolution skills as it allows the individual to assert himself and stand up for himself or the team without being rude, aggressive or passive.

Next identified DELTA talent is the *Social sense*, perhaps the most elastic soft skill in the palette of individual skills, the possession of which is a powerful personality resource. It correlates directly with the cultural range of the maritime sector, being expressed in the ability to effectively interact with diverse categories of people possessing different cultural self-awareness.

In the core of social sense stands the compilation of flair and knowledge about how to connect with others, how to construct the relationship, what

kind of communication to apply, how to interpret, direct and accordingly influence the interpersonal interaction.

The fundamental basis of social sense consists of [22]:

- Cognitive empathy, which is the skillful and rapid identification and reading of emotions, including nonverbal emotional signals, feelings, and personality adjustment.
- Extroverted attitude, expressed in openness and unprejudiced openness to the person, active interest and listening, positive attitude of respect, tolerance and patience.
- Empathic accuracy, describing the process of understanding, empathizing and synchronizing with the feeling and specificity of the person, so that the relationship is constructed on the basis of support and empathy.

When the social sense is developed and refined in wide ranges, it becomes an art to recognize, understand and use the specifics of the other person in a constructive and positive way, building valuable relationships that improve teamwork.

In essence, this is the core of rich social competence possession.

Alongside comes the talent of *Self-Motivation* [17], [18] which requires and actually creates a well-developed self-leadership. In its essence, self-leadership describes a person's ability to command himself, to lead himself, to force himself to achieve what he needs to, but also to do it with positivity, by managing to create in himself an interest and desire to complete the task, that is, to be self-motivated.

It is seen as the ability of a person to draw from himself energy, passion and optimism and direct them towards the respective goal that he has set for himself. The main ingredient that creates an inexhaustible source of self-motivation is actually integrity - the foundation of character, from which arises the aspiration to lead a dignified life, in which the measure is the values we possess. The richer and deeper these values are, the greater the drive for self-improvement arises.

An essential ingredient of self-motivation is curiosity, which keeps the mind active, nimble, alert, and thus strengthens its resilience. It develops creative and innovative thinking, generates new ideas, opens up new worlds and possibilities, and helps to absorb different, diverse perspectives.

Curiosity is the vaccine that counteracts boredom, indifference and apathy - major blockages of the ability to self-motivate, because the inquisitive person always finds new interesting and exciting things, we can even say

new "toys", in everything that surrounds him. From curiosity comes the inspiration of the individual to set new goals, to conquer unknown horizons, to develop his skills and to upgrade himself.

As final, it is time to describe the DELTA talent *Flexibility*, which we can summarize as one of the most delicate talents, because it blends the elasticity through which different combinations of cognitive skills, self-motivation and mind-loading are formed and applied in a certain range of time.

Because of that, flexibility manifest itself best in time management skills of the person, and represent a golden key to achieving team and organizational goals. It is expressed by the cognitive speed and flexibility during the processes of critical and creative thinking, focus, prioritization, problem solving, decision making, planning and delegation [21].

The proposed model summarizes a set of skills which if acquired successfully by the trainees in the maritime educational and qualification institutions, will meet the expectations of the maritime business and, respectively, will increase the effectiveness and efficiency of the human resources in the maritime sector. This guidelines can prove the hypothesis that the development of soft skills creates a more competitive workforce in the maritime domain.

In this regard, the maritime educational institutions can develop these skills through the implementation of new or improved disciplines, trainings, academic courses, through which to pursue the construction and evolution of these specific soft skills. The proposed hypothesis suggests continuing research in this direction in order to determine the impact of soft skills development for an effective workforce creation in the maritime domain.

5. Conclusion

The new era in maritime domain discovers significant challenges for development of workforce that is capable of providing a powerful and progressive resource for the organizations in the Blue sector. Consequently, there is a need for transformation in the selection of personal skills that corresponds most effectively with these dynamic changes.

The present study identified soft skills as these delicate human qualities that are most demanded by the maritime sector in the Republic of Bulgaria, in order to achieve sustainability and progress in this compelling time.

From them, teamwork skills, effective communication, adaptability and organizational skills emerged as key factors for progressive career development in the maritime domain.

Because of this outcropping conceptual frame, an attempt was made to derive the specific components of these skills in the form of Conceptual Model of Professional Maritime Soft Skills.

As a result, twelve main soft skills were synthesized in four categories and six core DELTA talents were identified as specific ingredients which actually form the skills and shape the connections between them.

The value of this model is expressed by the formation of specific guidance and areas for educational development and soft skills training of maritime personnel.

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Submitted:	24/01/2024	Anna Karadencheva
Accepted:	13/05/2024	Nikola Vaptsarov Naval Academy Vasil Drumev Str. 73, Varna, Bulgaria Email: a.karadencheva@nvna.eu
		Boyan Mednikarov Nikola Vaptsarov Naval Academy Vasil Drumev Str. 73, Varna, Bulgaria Email: b.mednikarov@nvna.eu
		Valeri Stoyanov Nikola Vaptsarov Naval Academy Vasil Drumev Str. 73, Varna, Bulgaria Email: v.stoyanov@nvna.eu
		Siyana Lutzkanova Nikola Vaptsarov Naval Academy Email: Vasil Drumev Str. 73, Varna, Bulgaria Email: s.lutzkanova@nvna.eu