



INTEGRATING GREEN INTO BLUE WORLD: ADAPTING OF GREEN HUMAN RESOURCES MANAGEMENT PRACTICES TO STCW CERTIFICATION

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Abstract: *One of the important components of economic growth and sustainable development is the Green Human Resources Management (GHRM) approach, which effectively and successfully implements environmental sustainability. GHRM, which focuses on people as a mechanism that effectively directs environmental management, also constitutes an effective competitive element for businesses. In the maritime sector, which has a specific field of study compared to many businesses, the adaptation of the GHRM system to the management of seafarers is expected to bring a groundbreaking new perspective compared to traditional methods in this field. Within the scope of this study, firstly the GHRM literature and STCW certification literature were included, and then it was determined what kind of revision GHRM practices required in STCW Certification standards. When the training curriculum that seafarers receive to ensure working conditions at sea is examined, it is observed that the competencies related to environmental sustainability required by IMO (International Maritime Organization) are not included in the programs. This study primarily aims to raise awareness about the need to increase seafarers' competencies in GHRM. As a result of the study, it was evaluated that it was an important requirement for all seafarers to undergo a training and certification process for GHRM practices in addition to STCW Certification, and the research was concluded by presenting future suggestions to decision makers.*

Keywords: *Green Human Resources Management, environmental sustainability, STCW Certification, International Maritime Organization*

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*The summary of this study was presented at the IAME 2024 congress in Valencia on 27.06.2024.



INTRODUCTION

Increasing environmental problems and concerns about sustainability on a global scale have necessitated the adoption of green practices in all sectors. The maritime sector is also taking its share from this transformation. Especially the initiatives of the International Maritime Organization (IMO) to increase environmental sustainability in the maritime sector have accelerated the green transformation in the sector. In this context, the International Convention for Standards and Training at Sea (STCW) is an important factor that directly affects human resource management in the maritime sector. This paper addresses how green human resource management practices can be integrated into STCW certification and emphasizes the importance of this integration. In this context, firstly, the concepts of green human resource management and STWC certification will be clarified. Afterwards, the literature on this subject will be analyzed and evaluations will be made regarding the integration of green human resource management practices into STCW certification in the maritime sector with a focus on sustainability.

BACKGROUND AND CONCEPTUAL APPROACH

2.1. Green Human Resources Management

One of the most compelling problems of this century is environmental destruction and global climate change which generating economic losses from weather and climate-related disasters. It has been observed that human activities have been driving the global warming trend since the mid-20th century. The commercial activities are often at the center of sustainability discussions and is seen as a major source of environmental damage at local, regional and global levels. Businesses are therefore considered to have a pivotal role to fill in tackling environmental issues (Shafeai et.al, 2020, <https://climate.nasa.gov/causes>).

GHRM offers strategies that address exactly this need, aiming to enable the human element to fulfill its duties in the management of environmental problems. GHRM practices, on the one hand, enable institutions to contribute to environmental sustainability, and on the other hand, increase corporate reputation by giving importance to environmental awareness in an intensely competitive environment.

Previous studies have identified GHRM as human resource policies or practices related to the management of the organization's environment, but more current studies have focused on the extension of these policies to include 'green' issues, such as the strategic role of fostering organizational performance and the behavioral and attitudinal change of employees in the process of implementing practices for environmental management (Xie H, Lau, 2023).

According to some research, green practices in the workplace contribute positively to financial performance by improving employee attributes such as motivation and competence. The growth of green practices enhances employee satisfaction and leads to a more sustainable corporate culture with higher efficiency and lower costs (Awwad, et.al., 2022).

2.2. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)

STCW, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended, is an agreement between virtually all seafaring nations and applies generally to all seafarers, ships and ship operators of nations that are signatories



to the Convention. The Convention consists of three parts: the Articles, the Annex and the STCW Code (Pluta & Paul, 2002). The overall objective of the STCW Convention is to prescribe minimum standards for the training, certification and service of seafarers that are universally applicable and consistent, and to protect the safety of persons, property and the environment at sea through the monitoring of human factors and human manning. On the basis of the STCW Convention, each seafarer supplying country will develop seafarer training standards that are appropriate to its own country and that are closely aligned with the technology and regulations of the shipping sector (Xu, 2020).

Although there are many different types of ship, maritime can be broadly defined as any type of work performed on board any type of ship. On closer inspection, there are five maritime tasks defined on board a ship, although they vary according to the type of ship. They can be listed as follows (Grech et.al., 2019):

1. Navigation: Route planning, tracking and collision avoidance
2. Propulsion: Responsibility for the safety of the ship's propulsion system and related auxiliaries.
3. Cargo Handling: Loading, unloading and maintaining cargo in good condition
4. Platform maintenance: Keeping the vessel, its equipment (e.g. auxiliary equipment) and crew in good working order.
5. Ship management: Distribution of roles and duties, monitoring and supervision, and communication.

The ship provides an unusual and sometimes harsh working environment. Crew members are required to perform most of their duties in a moving environment. In addition, the working environment is characterized by a lack of family contact, a mix of different cultures and a high level of boredom for much of the workday. Not surprisingly, this environment itself increases the risk of error. The maritime element of all these features means that people are becoming more important every day. Due to all these characteristics, the human element in the maritime industry is becoming more important every day and there is a need to further develop human resource applications (Grech et.al., 2019).

Human resources management practices, known as CRM (Crew Resource Management) in maritime sector are provided through the STCW documents regulated by IMO. Theoretical approaches to CRM training concentrate more on enhancing team collaboration and training performance, emphasizing the skill element (Wahl&Kongsvik, 2018).

CRM was first introduced as a teaching tool by the aviation sector in the 1970s as a reaction to the large number of accidents in the aviation industry due to human mistakes (Wahl&Kongsvik, 2018). CRM involves not only optimizing the human-machine interaction and the gathering of accurate and timely information, but also encompasses interpersonal activities such as creating and sustaining efficient teams, management, decision making, problem solving, and maintenance of situational awareness (Wiener, et.al., 2010).

The maritime industry's adoption of CRM applications dates back to the 1990s, when accidents caused by human errors were detected. Research into human resources in the maritime sector has identified individual factors such as stress, fatigue, decision-making, situational awareness, health, teamwork and communication as contributing to accidents. Subsequently, the International Maritime Organisation (IMO) amended the minimum competency standards for seafarers (IMO 2011) to require all ship officers to undergo leadership and teamwork training and to demonstrate knowledge of the principles of bridge and engine room resource management (BRM and ERM respectively) in order to be certified or to renew their certificates (Wahl&Kongsvik, 2018).



3. AN EVALUATION OF THE INTEGRATION OF GREEN HUMAN RESOURCES MANAGEMENT INTO STCW CERTIFICATION

3.1. Aim and Scope

Today, the importance of environmental sustainability is an undeniable fact. In this context, the maritime sector also undertakes the mission of protecting and improving the ecological balance by ensuring the integration of the green and blue world. The issue of "Adaptation of Green Human Resources Management Practices to STCW Certification" has a critical importance in the realization of this vision. The aim of this study is to develop human resource management strategies based on sustainability principles in the maritime sector and to investigate how these strategies can be integrated with the International Maritime Organisation's (IMO) Standards for the Training, Certification and Watchkeeping of Seafarers (STCW) certification. The scope of the study includes the identification of green human resource management practices, analysing their current and potential impacts in the maritime sector and a detailed examination of their integration into the STCW certification process. Through this integration, it is aimed to promote a sustainability-oriented culture in the maritime sector and to increase the environmental awareness of professionals working in this field.

3.2. Methodology

This study is a qualitative study that aims to answer the question of how green human resource management practices are integrated into the Training, Certification and Watchkeeping for International Standards in Maritime (STCW) certification process. Qualitative study can be defined as a process that seeks to understand a phenomenon or situation in depth. Qualitative studies have different methods. In this study, literature review was preferred in order to make a detailed examination and to provide a basis for future studies. Therefore, the methodology of the study was designed to provide a comprehensive literature review on the subject and to address different aspects of the subject.

3.3. Literature Review

When the literature is examined, it is seen that there is a limited number of studies on the integration of green human resource management practices into the STCW certification process in the maritime sector. In fact, green human resource management is a topic that has entered the literature very recently. Sharma et.al. (2022) state that the first articles in the field of green human resource management were published in the early 2000s.

Jabbour, C. J. C. & Santos, F. C. A. (2008), emphasizing that human resource management has an important role in building sustainable organizations, examines how the integration of green practices can increase employee environmental awareness and engagement. Mandip, G. (2012) examines the impact of GHRM on commitment to environmental sustainability and discusses how practices such as green recruitment, training and performance management support green transformation in organizations. Renwick, D. W. et.al. (2013) provides a theoretical discussion of how GHRM can support organizational sustainability and aims to provide a framework for future research by reviewing the literature in the field of GHRM. Opatha, H. H. D. N. P. & Arulrajah, A. A. (2014) discuss the basic concepts and applications of GHRM and emphasize its contribution to organizational sustainability. Paillé, P. et.al. (2014) examines the impact of human resource management practices on environmental performance at the employee level and states that employees' perception of environmental responsibility plays an important role in this relationship. Dumont, J. et.al. (2017) examines the impact of green human resource practices on employees' green behaviors and environmental performance, and states that psychological green climate and employees' green values are important factors in this relationship. Yong, J. Y. et.al. (2019)



investigates the link between green intellectual capital and green human resource management, and presents findings on how green human resource management practices increase the environmental performance and sustainability of organisations. Saeed, B. B. et.al. (2019) examines how green human resource management practices encourage employees' proactive behaviors towards the environment and the study findings show that green human resource management can increase employees' environmental engagement.

When the literature on STCW was analyzed, a limited number of studies were found. Pourzanjani (2023) argues that a comprehensive review of the STCW Convention and Code offers an opportunity to shape training and crew requirements for the coming decades. The article addresses important issues for the future of maritime training and certification. Xu (2020) examines the applicability of the STCW Convention to autonomous ships (MASS). The study discusses how the STCW Convention articles can be applied to autonomous ships and what changes may be required to adapt to this new technology. Bao, J. (2021) examines the impact of STCW Convention amendments on maritime education and training in China. The authors analyzed the changes made by maritime training institutions in China to make their curricula and training methods in line with the STCW amendments. The results show that STCW amendments have improved the quality of maritime education in China. Yıldız and Uğurlu (2019) assess the impact of STCW Convention and Code revision requirements on Turkish maritime education and training. The authors examined the arrangements made by maritime education institutions in Turkey to comply with the STCW amendments. The study reveals that the STCW amendments have improved the quality of Turkish maritime education and training and brought it in line with international standards. Mindkowski, J. (2017) deals with the implementation of the STCW Convention in Poland. The author analyzed the changes made by Poland in maritime training and certification to meet the STCW requirements. The article discusses the steps Poland has taken to ensure STCW compliance and the challenges faced. Sampson, H. et.al. (2014) examines the progress in achieving regulatory compliance, including STCW, in the maritime industry. The authors assessed the performance of shipping companies in providing training and certification of seafarers in accordance with STCW requirements. The study discusses the barriers to regulatory compliance and strategies to overcome these barriers. Piniella F. (2013) examines the role of the STCW Convention in the implementation of the 2006 Maritime Labor Convention (MLC) of the International Labor Organization (ILO). By analyzing the relationship between STCW and MLC, the authors assessed the impact of these two conventions in improving working and living conditions in the maritime sector. The study emphasizes the importance of effective implementation of STCW and MLC. Demirel & Mehta (2009) examine the role of STCW amendments in developing an effective maritime education and training system. The authors discuss the developments and challenges that the STCW amendments have led to in maritime education and training. The article includes the problems encountered in the implementation of the STCW amendments and suggestions for overcoming these problems. Emad, G. R., & Roth (2008) examine the contradictions in the application of the STCW Convention in competency training and assessment. Based on their observations in a maritime training institution, the authors analyzed the difficulties and inconsistencies encountered in the implementation of STCW requirements. The study provides recommendations to improve the effectiveness of competence-based training and assessment.

It is noteworthy that there are no studies in the literature on the compliance of green human resources practices with STCW certification. At this point, the study is aimed to be a starting point for future studies.



3.4. Key findings and Implications

All the latest maritime and environmental developments have caused the practices related to human resources in maritime, that is, non-technical subjects, to become popular and to be further researched. This study emphasizes the need to update CRM applications in the maritime sector by taking into account the environmental element. In this context, GHRM functions, which are described as the method where the environmental and human elements come together in the best way, have been tried to be adapted to human resource management in maritime.

Adapting GHRM, a manifesto for understanding green culture in the organization and helping to create a green workforce, to the maritime sector in the context of this research, the following assessments are made:

- **Green Recruitment and Selection of Seafarers:** Green recruitment is described as the process of recruiting employees with relevant knowledge, competencies, mindsets and attitudes that align with an organization's environmental policy (Ahmad, 2015). Green recruitment in the maritime industry should be considered as an important criterion in the recruitment of seafarers. When green recruitment and selection procedures including GHRM practices are added to the STCW certification system, ship personnel will be more conscious about green practices. This could prevent human-caused pollution and even accidents in the maritime industry in the long run. In a highly competitive sector such as shipping, recruiting and training seafarers who are aware of green practices can also be a strong marketing factor in terms of quality. When employers set green policies and targets for themselves and recruit seafarers who will adopt and implement these targets, they also contribute to IMO's sustainability targets. As it has become an important competitive element, hiring green seafarer candidates enables employees to adapt to green policies more easily and quickly.

- **Green Training and Development of Seafarers:** Green training and development is a technique that allows workers to learn the environmental protection and conservation skills that are vital to meeting environmental goals. Green training and development activities encompass raising workers' environmental awareness, imparting green skills and enhancing their capabilities to adopt green work methods (Ercantan & Eyupoglu, 2022). When green training and development procedures including GHRM practices are adapted to the maritime sector via the STCW certification system, all seafarers will be encouraged to participate in environmental initiatives. Seafarers who make environmental awareness a way of life will be more likely to find their jobs meaningful. If the individual finds seafaring, which involves quite complex tasks, more meaningful, it will increase his motivation, which will contribute positively to performance. In maritime companies that invest in green training and development practices, environmentally friendly behavior will be reflected throughout the company in the long term, as seafarers' knowledge and practices in this area will be at a higher level. It is expected that as the ability to develop solutions to environmental problems increases, the competitiveness of maritime companies that prioritize these issues will continue to improve. On the other hand, a ship with well-trained and environmentally friendly seafarers is more trustworthy, increases the chances of being hired by ships and can also raise the maritime company's reputation to a superior standard.

- **Green Employee Involvement of Seafarers:** Employee involvement in decision making and engagement in green activities are the key parts of achieving environmental sustainability. Studies show that involving employees in the process of understanding, learning and implementing green practices makes a positive contribution to issues such as reducing waste, pollution and the efficient use of scarce resources (Veerasamy, et.al., 2023). Green participation in maritime is important for all seafarers to voluntarily participate in green processes effectively and efficiently. When seafarers are involved in the decision-making process on green practices, it is expected that the morale and



motivation of seafarers, whose ideas and opinions are valued, will be higher. In this way, seafarers will not only see green practices as a rule, but will also be involved in a process where they have a part in the decisions made. In this way, seafarers' voluntary compliance with green practices will be ensured. If the STCW certification system adapts seafarers' environmental participation practices to the maritime sector, it will enhance the success of maritime companies through teamwork and proper use of seafarers' communication networks. It is possible to benefit from the creativity of seafarers if their ideas on green practices are taken up and valued by the seafarers who actually work in the practical part of the profession. As in any other profession, the opinion of an expert in the maritime profession helps to identify the real causes of human related mistakes or accidents on board. In this way, a safer working environment will be provided and compliance with IMO targets will be achieved.

- **Green Performance Management of Seafarers:** Performance management is the process by which individuals are incentivised to improve their ability to contribute to the achievement of the organisation's mission and goals. Like many other issues, performance management is affected by green transformation. Green performance management is about translating the organization's environmental responsibilities and policies into employee performance. Previous studies on this topic have concluded that green performance management practices, when integrated into performance systems, protect environmental management from any damage (Ahmad, 2015). According to Fang and Zhan (2024), in green performance management, setting green goals and implementing green performance evaluation helps employees implement job-related environmental practices. If the STCW certification system adapts green performance management practices to the maritime sector, it is expected that employees' participation and motivation in green practices will increase. Environmentally friendly practices to be implemented by applying green performance criteria in maritime companies will help minimize errors and accidents caused by humans and ensure compliance with the targets set by IMO. In maritime companies that include green practices in their performance indicators, the international competition level of these institutions will be higher as the environmental competencies of seafarers will be at higher levels.

- **Green Compensation Management of Seafarers:** Green compensation management, a reward system that includes both financial and non-financial rewards, aims to retain and motivate employees to help achieve environmental goals. In addition to financial incentives, non-financial rewards such as green travel benefits, green taxes and green recognition are provided. Employee transport and travel is rewarded through green travel benefits. It can encourage them to decrease their carbon footprint and become more eco-conscious (Ercantan and Eyüpoğlu, 2022). In the framework of GHRM, compensation and rewards can be seen as possible instruments to encourage environmental practices in companies. Today's businesses are creating incentive schemes to encourage employees to take green initiatives. Green rewards can include the use of workplace and lifestyle benefits, ranging from carbon credit offsets to free bicycles, to engage people in the green agenda and continue to recognise their contributions (Mandago, 2018). When green compensation practices is added to the STCW certification system, the motivation of the seafarers will increase and it is expected that this will lead to a higher satisfaction of the seafarers and increase their commitment to the institution. This situation results in seafarers working in the maritime company staying longer in the institution, which reduces the labor turnover rate. Especially when the presence of environmentally sensitive and highly motivated employees is reflected in the corporate culture, the competitiveness of maritime companies increases and their preference rate rises.



4. CONCLUSIONS

Within the scope of this study, it has been evaluated that it is an important requirement for all seafarers to undergo a training and certification process for GHRM practices in addition to STCW Certification. Increasing seafarers' awareness of GHRM increases the safety and security of those working at sea and supports the protection of the marine environment with official practices.

This paper considers the STCW Rules and analyzes gaps in knowledge and skills that may be required in the development of maritime GHRM practices. It is essential to raise awareness among seafarers, especially on the reduction of carbon and Sulphur emissions, which is on the IMO agenda. Although the maritime sector tends to focus on technical issues related to pollution and accident prevention, it is at least as important to inform seafarers by emphasizing green practices within the framework of GHRM. In this respect, this research provides advisory revisions to the STCW Convention.



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