



**Asia-Pacific
Economic Cooperation**

Advancing Free Trade
for Asia-Pacific **Prosperity**

Maximizing APEC SEN Cross-Border Labor Mobility of Seafarers for the Digital Age

APEC Transportation Working Group

August 2022



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APEC Project: TPT 03 2020A

Produced by

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Abstract

Under the specific objective of the project on Maximizing APEC SEN Cross-Border Labor mobility of Seafarers for the Digital Age (TPT 03 2020A), designed to facilitate APEC seafarers' labor mobility and thereby, maximize cross-border people-to-people connectivity, this research paper investigates the barriers to seafarers' labor mobility from individual, industrial, and economic perspectives, as well as others caused by the COVID-19 pandemic. In order to accomplish this objective, the paper's primary focuses are divided into three general sections: a literature review; individual, industrial, and economic barriers posed to seafarers' labor mobility; and responses to COVID-19 in this regard.

In the literature review, the following topics from previous research and publications will be examined and discussed: general concepts on seafarers' labor mobility in the global shipping industry, an overview of the seafaring labor market, global trends in maritime recruitment, and the influence of the pandemic on seafarers' labor mobility. To identify obstacles and barriers to the labor mobility of seafarers from a more diverse perspective, a comprehensive investigation will be conducted into the key players of this issue at the individual, industrial, and economic levels, respectively. On the basis of the discussions, initiatives and steps taken to enhance the labor mobility of seafarers in the worldwide maritime sector will be explored and highlighted.

In the research analysis section, in order to accommodate the views of seafarers, the industry, and member economies, pre-interviews with focus groups, pilot surveys, and questionnaires were administered. These were respectively targeted to 143 seafarers, 29 shipping companies/industries, and 10 APEC member economies. The investigation was primarily focused on the following areas:

- **Seafarers:** motivation for pursuing a seafaring career, willingness to join a foreign shipping company on an international scale, factors that motivate seafarers to work for international shipping companies, and barriers to entry into international shipping companies;
- **Shipping companies:** reasons for hiring foreign officers from different regions, level of satisfaction with the employment of a multi-national crew, level of agreement to

employ foreign seafarers, preference for a specific geographic region or CoC-issuing economy, barriers to employing foreign crew members, attractions motivating seafarers to apply for shipping companies, seafarer capabilities that shipping companies aim to foster, and preferred means of capacity building for seafarers;

- **Economies:** willingness and agreement to employ foreign seafarers, economic barriers affecting labor mobility, and strategies employed by economies to attract foreign seafaring manpower.

In the following section, the effects of COVID-19 on the maritime industry and on seafarers' labor mobility were examined, on the basis of the international guidelines and suggestions issued by major international seafaring-related organizations, such as the International Maritime Organization, the International Chamber of Shipping, the United Nations Conference on Trade and Development, the European Maritime Safety Agency, and the International Labour Organization. The global maritime issues posed by the COVID-19 pandemic were then explored in depth, with a particular emphasis on the vaccination status of seafarers and their designation as key workers. Next, additional international actions will be recommended that are required to promote the labor mobility of seafarers during any comparable future threats.

Finally, the key conclusions drawn and recommendation from the research findings will be made, specifically focusing on the effects of seafarers' labor mobility on the shipping industry and economic growth in the APEC region; the challenges and barriers faced by individual seafarers, industries, and economies in relation to seafarers' labor mobility issues; the collaborative actions that can be taken under the APEC umbrella to maximize the cross-border labor mobility of seafarers; and the influences and reactions on COVID-19 to ensure seafarers' labor mobility.

Seafaring Acronyms and Definitions Used in the Research

- Certificate of Competency (CoC)
- Collective Bargaining Agreement (CBA)
- European Community Shipowners' Associations (ECSA)
- European Maritime Safety Agency (EMSA)
- International Monetary Fund (IMF)
- Flag of Convenience (FOC)
- Function Based Manning (FMB)
- International Chamber of Shipping (ICS)
- International Civil Aviation Organization (ICAO)
- International Labor Organization (ILO)
- International Maritime Organization (IMO)
- International Organization for Migration (IOM)
- International Transport Workers' Federation (ITF)
- Maritime Education and Training (MET)
- Maritime Labor Convention (MLC)
- Seafarers International Union (SIU)
- Standards of Training, Certificates and Watchkeeping (STCW)
- The Organization for Economic Co-operation and Development (OECD)
- The Oil Companies International Marine Forum (OCIMF)
- United Nations (UN)
- United Nations Conference on Trade and Development (UNCTAD)
- World Health Organization (WHO)

Definitions

- **Crew:** A person employed, engaged or assigned in any capacity onboard a vessel.
- **Flag State:** The economy where a vessel is registered. Flag States also set out the laws.
- **Officer:** A person authorized to serve in a position of authority onboard a vessel; above ratings in rank.
- **Seafarers:** A person employed onboard a ship, its crew. Includes Officers and Ratings.

TABLE OF CONTENTS

SECTION 1: INTRODUCTION	1
1.1.General Aim	1
1.2.Background of This Research	1
1.2.1. Research Questions	2
1.2.2. Overview of the Research	2
SECTION 2: LITERATURE REVIEW	4
2.1.Labor Mobility in the Global Shipping Industry.....	4
2.1.1. Labor Mobility	4
2.1.2. Overview of the Labor Market in the International Shipping Industry	6
2.1.3. Global Trends in Maritime Recruitment	10
2.1.4. Impact of the Pandemic on Seafarers’ Labor mobility	15
2.2.Challenges and Barriers to Seafarer’s Labor mobility	19
2.2.1. Individual Level	21
2.2.2. Industrial Level	25
2.2.3. Economic Level	27
2.3.Efforts and Measures for Enhancing Seafarers’ Labor mobility.....	30
2.3.1. International Standards and Requirements for Seafarers	30
2.3.2. Perceived Gap Between Recruitment Standards and Seafarer Qualifications	30
2.3.3. Future Competence of Seafarers	32
SECTION 3: RESEARCH ANALYSIS	34
3.1. Methodology	34
3.2. Research Analysis	35
3.2.1. Individual Barriers	35
3.2.1.1. Demographic Characteristics of Respondents.....	35
3.2.1.2. Analysis of Individual Barriers	36
3.2.1.3. Summary of Seafarers’ Cross-border Labor Mobility	48
3.2.2. Industrial Barriers.....	51

3.2.2.1. Demographic Characteristics of Respondents.....	51
3.2.2.2. The Analysis of Industrial Barriers	51
3.2.2.3. Summary of the Industrial Perspective	67
3.2.3. Economic Barriers.....	68
3.2.3.1. Demographic Characteristics of Respondents.....	69
3.2.3.2. Analysis of Economic Barrier	69
3.2.3.3. Summary of the Economic Perspective	78
SECTION 4: RESPONSE TO COVID-19	80
4.1. COVID-19 Impacts on the Maritime Industry and Seafarer Labor Mobility	81
4.2. International Guidelines and Suggestions	85
4.2.1 International Maritime Organization (IMO)	86
4.2.2 International Chamber of Shipping (ICS).....	87
4.2.3 United Nations Conference on Trade and Development (UNCTAD)	87
4.2.4 European Maritime Safety Agency (EMSA)	88
4.2.5 International Labour Convention (ILO).....	91
4.3 Global Challenges: Seafarer Vaccination and Designation as Key Workers.....	92
4.3.1 The Role of Seafarers in the COVID-19 Pandemic	92
4.3.2. The Nature of Seafaring	93
4.3.3. Seafarer’s Vaccination	94
4.3.4. Appointing Seafarers as a Key Workers	101
4.4. Further Response Requested	103
SECTION 5. CONCLUSION AND RECOMMENDATIONS	105

LIST OF FIGURES

Figure 1. Mean value of motivations for seeking a career in a seafaring profession	38
Figure 2. Seafarers' willingness and/or level of agreement to join or continue their careers at international foreign shipping companies	38
Figure 3. Seafarers' level of satisfaction while working with international foreign shipping companies	39
Figure 4. The effectiveness of working with foreign shipping companies in terms of advancing their seafaring careers.....	40
Figure 5. Key considerations when joining and/or re-joining to work with international shipping companies.....	42
Figure 6. Key barriers encountered by seafarers in terms of cross-labor mobility.....	45
Figure 7. Key barriers encountered by seafarers in terms of career and educational/training experiences.....	46
Figure 8 Key barriers encountered by seafarers in terms of soft skills.....	47
Figure 9. Reasons for hiring foreign officers from diverse locations	52
Figure 10. The level of satisfaction with the employment of a multi-national crew	53
Figure 11. Level of agreement to employ foreign seafarers	54
Figure 12. An industrial attitude toward cross-labor mobility.....	55
Figure 13. Preference on a specific geographic region or CoC-issuing economy.....	55
Figure 14. Barriers to employ foreign crew members	57
Figure 15. The recruitment packages offered in terms of monetary compensation, career advancement, and welfare.....	61
Figure 16. The capability of seafarers that shipping companies aim to foster in terms of hard skills, soft skills, and digital skills.	63
Figure 17. Preferred means of capacity building between digital and person-to-person.....	66
Figure 18. Willingness to employ foreign seafarers	69
Figure 19. Agreement to employ foreign seafarers	71
Figure 20. Economic barriers affecting labor mobility.....	75
Figure 21. Strategies employed by economies to attract foreign seafaring manpower	76
Figure 22. Number of passengers carried per year	89

Figure 23. Response actions suggested for controlling the risk of COVID-19 infection90

Figure 24. Benefits by designating seafarers as key workers 1022

LIST OF TABLES

Table 1. Reasons for pursuing a seafaring profession37

Table 2. Critical elements when joining and/or re-joining to work with international shipping companies41

Table 3. Specific types of barriers encountered by seafarers.....43

Table 4. Reasons for hiring foreign officers from diverse locations52

Table 5. The level of satisfaction with the employment of a multi-national crew53

Table 6. Level of agreement to employ foreign seafarers54

Table 7. Barriers to employ foreign crew members57

Table 8. Attraction to motivate seafarers to apply for shipping companies60

Table 9. The capability of seafarers that shipping companies aim to foster62

Table 10. Preferred means of capacity building for seafarers suggested by owner.....66

Table 11. Economic barriers affecting labor mobility72

Table 12. Strategies employed by economies to attract foreign seafaring manpower.....76

Table 13. Prioritized use of primary series and booster doses by vaccine coverage rates in higher priority-use groups.....97

SECTION 1: INTRODUCTION

1.1. General Aim

This project aims to facilitate the labor mobility of APEC seafarers by identifying the labor determinants that maximize people-to-people connectivity across borders. The findings of the research will contribute to identifying the barriers and obstacles to labor mobility currently facing individual seafarers, the shipping industry, and member economies across the APEC region, and suggest mutual collaborative actions to shape policies to enhance seafarer mobility.

1.2. Background of This Research

As one of the most socially vulnerable groups, seafarers from 21 APEC economies are not only an indispensable source of human capital for the global maritime industry, covering at least 56 percent of the world's seafaring population¹, but are also pivotal in providing support to their economies as a major industrial pillar. This is especially important in developing economies, where the skills development and labor mobility enhancement of human resources are essential to creating sustainable and inclusive regional growth.²

In terms of seafarers' cross-labor mobility across the APEC region, the lack of reliable and quality information transfer has been highlighted as one of the most critical challenges to tackle. This impacts not only seafarers wishing to join an international shipping market that ensures a decent standard of living, but also training institutions, the shipping industry, and government sectors in need of up-to-date information on employment trends and policy changes in the global shipping market by the means of research data, conferences, and policy dialogues. That is, labor mobility is not an issue solely for seafarers seeking a wide range of information on recruitment, career development, and job transition more directly and engagingly, but also for other seafarer-related bodies such as governments, training institutions, and shipping companies who are responsible for promoting the labor mobility of seafarers in terms of policy support, education, and employment, respectively. From this perspective, the enhancement of seafarers' labor mobility across the APEC region is expected to provide multifaceted economic and social benefits not only to major seafarer-supplying economies

¹ BIMCO/ICS, "Seafarer Workforce Report", 2015

² UNCTAD, "Review of Maritime Transport", 2021

(e.g., China; Indonesia; Malaysia; the Philippines; and Viet Nam) but also to those economies that demand a steady supply of well-qualified seafaring manpower (e.g., Hong Kong, China; China; Japan; the Republic of Korea; and Singapore). In this research, therefore, to enhance seafarers' cross-border labor mobility by linking highly educated, well-qualified, and efficient maritime workforces from across the APEC region to the global shipping industry, the following research questions will be addressed and investigated.

1.2.1. Research Questions

- What are the impacts of seafarers' labor mobility on the shipping industry and economic growth within the APEC region?
- What types of challenges and barriers do individual seafarers, industry and economies face in terms of seafarer labor mobility issues?
- What collaborative actions can be taken under the APEC umbrella to maximize the cross-border labor mobility of seafarers?
- What are the influences of COVID-19 on seafarers' labor mobility?

1.2.2. Overview of the Research

- **Section 1, Introduction**, presents the general aim of this research, the research background, key questions (including the types of challenges and barriers facing individual seafarers, industry, and economies, the collaborative actions that can be taken under the APEC umbrella, and the influences of COVID-19 on seafarers' labor mobility), and an overview of the research paper.
- **Section 2, Background**, closely examines the status of seafarers' labor mobility in the international shipping markets before reviewing the existing barriers and obstacles hindering seafarers' labor mobility in the international shipping market at the individual, industrial, and economic levels. Finally, efforts and measures to enhance seafarers' labor mobility will be investigated in the areas of capacity building, utilization of digital technology, and enhancement of mutual collaboration among interested parties.

- **Section 3, Research on Seafarers' Labor Mobility**, provides details of the surveys, methodology, and analysis, alongside outcomes with recommendations, based on a questionnaire survey used to elicit policy measures on seafarers' labor mobility across member economies in a statistical manner. As a result of the analysis, the perspectives of seafarers, shipping companies, and economies were closely examined from a different angle, and the primary components of the barriers, as well as potential responses to the issues raised, were suggested.
- **Section 4, Response to COVID-19**, closely examines the current challenges and issues in the seafaring industry in terms of overcoming the adverse impacts of COVID-19, to suggest future policy measures for use in both the current and post-COVID-pandemic eras.
- **Section 5, Conclusion and Recommendations**, summarizes the key findings of the research and recommends future actions across the APEC region.

SECTION 2: LITERATURE REVIEW

2.1. Labor Mobility in the Global Shipping Industry

2.1.1. Labor Mobility

As the world is transforming to be more interconnected, with an upsurge in the movement of information, capital, goods, services, and workforce across international borders,³ the expansion of seafarers' labor mobility between regions has become an issue of growing importance in the shipping industry, where the seafaring workforce lies at the heart of its driving force.

In the context of the shipping industry, labor mobility instantiates the flexibility and degree of freedom of seafarers' movement from one region to another in pursuit of gainful employment in the field.⁴ There are two primary types of labor mobility: **geographic and occupational**. **Geographic labor mobility** refers to the ability of workers within a specific economy to relocate to find new or better employment. This is contrasted with **occupational labor mobility**, which is workers' ability to change jobs or professions irrespective of geographical location.⁵

In terms of **geographic labor mobility**, seafarers' workplaces are largely confined to the ships they serve, which transport cargo from one port to another across seas and oceans. In this respect, the mobility of seafarers has been greatly enhanced over time, given that a growing number of them work on ships flying foreign flags, and/or that are owned or managed by foreign shipping companies, rather than being confined to their own domestic fleet.⁶ This enhanced mobility relates to a practice commonly known in the shipping industry as "flagging-out," by which shipowners/managers are permitted to register their ships in Flag of Convenience (FOC) economies, such as Liberia and Panama, while employing seafarers from any labor-supplying economies.⁷ Since the 1970s, this phenomenon in the maritime industry

³ UNCTAD, "Review of Maritime Transport", 2019

⁴ C. Halton, "Geographical Labor Mobility", 23 July 2021, accessed 13 June 2022, <https://www.investopedia.com/terms/g/geographical-mobility-of-labor.asp>

⁵ B. Radcliffe, "The Economics of Labor Mobility", 30 March 2022, accessed 13 June 2022, <https://www.investopedia.com/articles/economics/09/labor-mobility.asp>

⁶ L. Tang and G. Chen, "Costs and benefits of mobility: the case of Chinese seafarers", 2017, <https://pearl.plymouth.ac.uk/handle/10026.1/10481>

⁷ L. Tang, "Global problems, local solutions: Unfree labour relations and seafarer employment with crewing agencies in China", 2019, <https://pearl.plymouth.ac.uk/handle/10026.1/13773>

has led to a considerable shift in labor politics and recruitment practices. Since FOCs have been used as a tool for evading the stricter labor regulations of the economies in which their companies are based,⁸ the global shipping industry has come to increasingly rely on cheaper and more flexible labor across the world. It has been argued that for this reason, while the potential for broader geographic labor mobility has grown, so too has temporary employment across the international shipping industry.⁹ This means that seafarers are more likely to be hired on a short-term basis, thus rendering their employment precarious. As a result, seafarers have no choice but to move frequently from one contract to the next, potentially with a different employer each time.¹⁰

In the era of flexible and precarious employment, the concept of a “career for life” appears to be redundant, as most employees in the global labor market no longer have permanent employment.¹¹ Although many ratings continue to perceive seafaring as a lifetime career, many have been compelled to leave the profession due to a lack of prospects.¹² In light of this, the concept of **occupational labor mobility** enables seafarers to switch career fields and pursue new career options¹³ on shore. As part of ship-to-shore mobility strategies, seafarers move to landside jobs based on a wide range of factors influenced by their experiences onboard.¹⁴ These movements are largely motivated by challenges such as a lack of career advancement opportunities at sea, the need for the younger generation to start or build their own families, the emergence of new landside career options, and the relatively harsh working conditions onboard ships.¹⁵

⁸ R. D. Elizabeth, “Flagging Standards: Globalization and Environmental, Safety and Labor Regulations at Sea”, 2006

⁹ Tang L, “Global problems, local solutions: Unfree labour relations and seafarer employment with crewing agencies in China”, 2017, <https://pearl.plymouth.ac.uk/handle/10026.1/13773>

¹⁰ L. Tang and G. Chen, “Costs and benefits of mobility: the case of Chinese seafarers”, 2017, <https://pearl.plymouth.ac.uk/handle/10026.1/10481>

¹¹ ILO, “World Employment and Social Outlook 2015: The Changing Nature of Jobs”, 2015

¹² L. D. Caesar, “The Global Shortage of Ship Officers: An Investigation of The Complexity of Retention Issues Among Australian Seafarers”, 2016, https://eprints.utas.edu.au/23038/1/Caesar_whole_thesis.pdf

¹³ A. Hayes, “Occupational Labor Mobility”, August 16 2021, accessed 13 June 2022, <https://www.investopedia.com/terms/o/occupational-labor-mobility.asp>

¹⁴ Southampton Solent University, “The Mapping Of Career Paths In The Maritime Industries”, 2005, <https://www.ecsa.eu/sites/default/files/publications/054.pdf>

¹⁵ L.D. Caesar, et al., “Exploring the range of retention issues for seafarers in global shipping opportunities for further research” 2015, https://www.researchgate.net/publication/273490719_Exploring_the_range_of_retention_issues_for_seafarers_in_global_shipping_opportunities_for_further_research

For these reasons, an approach to increasing the labor mobility of seafarers should be considered from various perspectives. For those wishing to continue at sea, a wide range of support packages should be established that promote secure and sustainable seafaring careers and enhance promising opportunities and job prospects (e.g., career progression, reasonable rewards, and good working conditions) onboard. Conversely, for seafarers seeking to move from ship to shore by utilizing their accumulated onboard experience, concerted endeavors must be made to establish a systematic job-transition system that will support and map out future career paths in the maritime sector.

2.1.2. Overview of the Labor Market in the International Shipping Industry

The international shipping industry is pivotal to the sustainable growth of the global economy in the sense that around 80 percent of global trade volume is transported by vessels worldwide.¹⁶ Given that a highly internationalized seafaring workforce amounting to 1.89 million people sits at the core of ship operations,¹⁷ the smooth running of the shipping industry is directly dependent on and interconnected with a timely, flexible, and efficient supply of qualified seafarers.

According to the International Chamber of Shipping (ICS), several leading APEC economies, respectively China; the Philippines; Indonesia; and the Russian Federation, are estimated to be among the world's major suppliers of the seafaring workforce, accounting for the provision of 56 percent of the world's seafaring population.¹⁸ As per a recent report from the United Nations Conference on Trade and Development (UNCTAD)¹⁹, based on data from Clarkson's Research, the following factors strongly support the importance of APEC economies in the international shipping and seafaring industry:

- As of January 1, 2021, Japan and China were recorded as two of the top three ship-owning economies among the top 35 shipowners worldwide, in terms of both dead-

¹⁶ UNCTAD, "Review of Maritime Transport", 2021

¹⁷ BIMCO/ICS, "Seafarer Workforce Report", 2021

¹⁸ BIMCO/ICS, "Seafarer Workforce Report", 2015

¹⁹ UNCTAD, "Review of Maritime Transport", 2021

weight tonnage (DWT) and the commercial value of their fleets.

- Viet Nam recorded the second-largest rise in the share of carrying capacity, increasing from 0.52 to 0.59 percent in 2020.
- In terms of value, the highest value increases in the share of the world merchant fleet were recorded by Chinese Taipei, which grew from 1.49 to 1.86 percent, and the Republic of Korea, which grew from 2.77 to 3.08 percent.
- In terms of both the carrying capacity and commercial value of their fleets, 11 APEC member economies were classified among the top 35 leading flags of registration as of January 1, 2021: China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; Malaysia; Philippines; the Russian Federation; Singapore; Chinese Taipei; and Viet Nam, respectively.
- Among the top 35 flags of registration, the greatest increases in ship registration by DWT were observed in Viet Nam, which grew by 12.1 percent, from 9,868 to 10,269 thousand DWT, and the Russian Federation, which grew by 10.4 percent, from 9,164 to 10,899 thousand DWT.

Considering the data above, it is undeniable that APEC has a significant role to uphold in the international shipping industry, and on a substantial scale, in terms of enhancing and facilitating the labor mobility of seafarers both in and beyond the APEC region. As is likewise clearly illustrated in the aforementioned reports, seafarers are crucial to the labor market of the shipping industry. Their area of employment can be regarded as all the seas around the world since the labor market is considered to be a global one in which no region holds a monopoly.

²⁰ However, the BIMCO Seafarer Workforce Report 2021 underscores a constant shortage of Standards of Training, Certification, and Watchkeeping (STCW)-certified officers, highlighting a current shortfall of 26,240, which may provoke a severe shortage in the total supply of officers by 2026. In addition to the above, STCW-certified officers with technical experience at the managerial level are in short supply, especially in the tanker and offshore sectors. This outpacing of demand over supply means an additional 89,510 STCW-certified officers will be needed to operate the world merchant fleet by 2026.²¹

²⁰ E. Kartal et al., "An analysis and comparison of multinational officers of the watch in the global maritime labor market", 2019, <https://doi.org/10.1080/03088839.2019.1597290>

²¹ BIMCO/ICS, "Seafarer Workforce Report", 2021

As a result of such findings, interest has been growing in the topic of labor shortage and seafarer mobility within the international maritime industry. To meet the future demand for seafarers, it is vital to accelerate the formation of a cooperative, cross-border job-seeking environment at sea by maximizing the flexibility and freedom of seafarers' labor mobility across international borders. Such an environment will ultimately enable strengthened connections between highly educated, well-qualified, and efficient seafaring workers and those seeking to employ them in the international shipping industry.

Flexibility may be a determining factor in terms of how well the labor market can cope with changes to demand, from both **a numerical** and **a functional point of view**. In terms of **numerical flexibility**, employers can relieve strain on the labor market by modifying their deployment of labor. For example, in the event of a labor "shortage," employers have historically used the practice of onboard overtime to adjust the total amount of labor by extending seafarers' onboard working periods or contracts. Comparatively, **functional flexibility**, denoting the extent to which seafarers can transfer their services to different sectors and ranks within the labor market, is considerably more limited. While employers can have a direct impact on numerical flexibility in the market, functional flexibility is mainly determined by institutional forces in the international arena of the industry. These institutions develop rules and regulations that have an impact on the workings of the labor market, including the legislation of certification, the imposition of relevant experience limitations, and the implementation of special training programs within a particular sector or group of owners. In this sense, the seafaring labor market is numerically flexible in the supply of labor but limited in its functional flexibility.

While numerical flexibility could provide benefits to employees in many aspects, such as increased incomes,²² it is also associated with various drawbacks in terms of shift work and the intensification of labor at sea, leading to profound pitfalls such as seafarer fatigue and inefficient job performance. This argument is supported by the literature on working patterns

²² V. Wickramasinghe et al., "Practice of Workforce Flexibility: Internal, External, Numerical and Functional Flexibility", 2019, https://www.researchgate.net/publication/330316018_Practice_of_Workforce_Flexibility_Internal_External_Numerical_and_Functional_Flexibility

and shift schedules, which underlines three significant tendencies that have arisen from the research on shift schedules and safety²³: (1) the risk of an accident is higher when working at night (and to a lesser extent, when working in the afternoon) compared to in the morning; (2) the risk of an accident increases over a series of shifts, again especially at night; and (3) the risk of an accident increases as the total shift length increases above eight hours (in any 24-hour period).

In response to the prevailing catch-22 conditions in the shipping industry labor market, research²⁴ has suggested a practical approach to achieving optimized manning with integrated functional flexibility. The author proposed a solution that encompassed functional flexibility and working time flexibility, arguing that the ground for a win-win situation between seafarers and shipping companies can be laid by integrating functional flexibility with job enrichment and continuous professional development with work-time flexibility. This research further accentuated the need to enhance functional flexibility in the labor market by introducing the concept of Function Based Manning (FBM). FBM proposes that the work functions on a ship must be carried out to the highest degree of efficiency, with recruitment that is highly optimized according to seafarers' essential work functions, which are identified as groups of skills, abilities, and responsibilities. In this context, work functions can be adapted to the available crew members by matching the work to the members' competence profiles to ensure the flexible execution of work functions, as well as flexible teamwork.²⁵

As has been previously identified, the establishment of a more integrated and enhanced functional flexibility in the international shipping industry is a crucial prerequisite for the stable flow of skilled labor into the field, thereby ensuring its sustainability and economic growth. Given that APEC is a crucial player in the global shipping industry, maritime policymakers and government institutions within the APEC region must make concerted efforts to ease seafarer recruitment systems and enhance seafarers' capacity and qualifications. Furthermore, all

²³ S. Folkard et al., "Shiftwork: Safety, Sleepiness and Sleep", 2005, https://www.researchgate.net/publication/8001985_Shiftwork_Safety_Sleepiness_and_Sleep

²⁴ M. Ljung, "Function-based manning and aspects of flexibility", 2010, https://www.researchgate.net/publication/227150486_Function_based_manning_and_aspects_of_flexibility

²⁵ M. Ljung, "Function-based manning and aspects of flexibility", 2010, https://www.researchgate.net/publication/227150486_Function_based_manning_and_aspects_of_flexibility

relevant stakeholders in the shipping industry, both within and beyond the APEC region, must anticipate and seek to mitigate the future challenges concerning the shortage of seafarers, automation and digitalization, and the aging seafaring workforce.²⁶ Only by doing so can the shipping industry keep pace with the growing demand for competent higher-level officers while under pressure from the rapidly shifting megatrends of the maritime sector.

2.1.3. Global Trends in Maritime Recruitment

As previously noted through FOC, there has been a growing desire among shipowners for more cost-effective labor when crewing internationally flagged vessels.²⁷²⁸²⁹ The increasing number of seafarers employed from developing and emerging economies on the global labor market has caused a significant shift in the “center of gravity of the labor market for seafarers,”³⁰ relocating it from “traditional” maritime labor-supplying economies such as Western Europe and the OECD members towards the Far East, Indian sub-continent, and Eastern Europe.³¹ As a result, mixed-nationality crews currently make up the majority of the workforce serving on the world’s ships.³²

In addition, reflecting trends seen in other global industries, as the composition of the crew onboard is changing,³³³⁴ shipping companies are increasingly utilizing third-party recruitment services to recruit seafarers.³⁵ These third-party agencies are mainly based in emerging economies such as the Philippines or Romania, and they recruit local personnel for shipping

²⁶ BIMCO/ICS, “Seafarer Workforce Report”, 2021

²⁷ P. B. Talmor, “Careers and Labor market Flexibility in Global Industries”, 2018, <https://orca.cardiff.ac.uk/id/eprint/109438/12/109438%20DEC%20PAGE%20REMOVED.pdf>

²⁸ T. Alderton and N. Winchester, “Globalisation and de-regulation in the maritime industry”, 2002, <https://www.science-direct.com/science/article/abs/pii/S0308597X01000343>

²⁹ H. Sampson, “International seafarers and transnationalism in the twenty-first century. Series Title: New Ethnographies. Manchester, Manchester University Press”, 2013

³⁰ BIMCO/ICS, “Seafarer Workforce Report”, 2005

³¹ BIMCO/ICS, “Seafarer Workforce Report”, 2015

³² M. Bloor and H. Sampson, “Regulatory enforcement of labour standards in an outsourcing globalized industry the case of the shipping industry”, 2009

³³ Ellis et al., “Seafarer accommodation on contemporary cargo ships”, 2012, <https://orca.cardiff.ac.uk/id/eprint/64728/>

³⁴ Ellis et al., “The global labor market for seafarers working aboard merchant cargo ships 2003”, 2008, <https://orca.cardiff.ac.uk/id/eprint/27448/>

³⁵ H. Sampson, “International seafarers and transnationalism in the twenty-first century. Series Title: New Ethnographies. Manchester, Manchester University Press”, 2013

companies all around the world.³⁶ The employment of third-party recruitment agencies highlights the loss of the direct contact that previously existed between shipping companies and seafarers, and this has been claimed to have a primarily negative impact on seafarers' working and living circumstances onboard vessels.^{37,38}

In conjunction with these shifts, there has been a significant increase in the number of temporary contracts provided to seafarers.^{39,40} While seafarers' unions (such as the International Transport Workers' Federation (ITF)) have strongly advocated for greater consideration to be given to permanent contracts, seafarers in the global labor market are increasingly hired on temporary contracts with short-term retention.⁴¹ A more serious issue arises from the fact that seafarers hired on short-term contracts typically become unemployed at the end of their contracts leaving them with no social benefits such as medical and life insurance.⁴²

Due to the prevalence of temporary employment, numerous seafarers lack access to state-funded pension plans in their respective economies.⁴³ Faced with this absence of job security and pension plans, there have been reports of seafarers signing heavily extended contracts – for example, up to two years – in an effort to maximize their earnings throughout their employment.⁴⁴ In research by Gerstenberger,⁴⁵ the reason for this is clear: “these seafarers cannot wish for short contracts as long as they cannot be reasonably sure that they will be

³⁶ H. Sampson, “International seafarers and transnationalism in the twenty-first century. Series Title: New Ethnographies. Manchester, Manchester University Press”, 2013

³⁷ M. Dutt, “Indian Seafarers’ Experiences of Ill- Treatment Onboard Ships”, 2015

³⁸ Gekara et al, “Re-Imagining Global Union Representation Under Globalisation: A Case of Seafaring Labour & the Nautilus International Cross-Border Merger”, 2013

³⁹ M. Bloor and H. Sampson, “Regulatory enforcement of labour standards in an outsourcing globalized industry the case of the shipping industry”, 2009

⁴⁰ Ellis et al., “Seafarer accommodation on contemporary cargo ships”, 2012, <https://orca.cardiff.ac.uk/id/eprint/64728/1/Seafarer%20Accommodation.pdf/>

⁴¹ Ali et al., “Protean attitude, career self management and career satisfaction: A new facet of perceived employability in recessionary times”, 2014

⁴² M. Dutt, “Indian Seafarers’ Experiences of Ill- Treatment Onboard Ships”, 2015

⁴³ H. Sampson and T. Schroeder, “In the wake of the wave: Globalization, networks, and the experiences of transmigrant seafarers in northern Germany”, 2006

⁴⁴ Gerstenberger, “Cost elements with a soul”, 2002

⁴⁵ Gerstenberger, “Cost elements with a soul”, 2002

employed again after their leave.” However, despite the promise of a relatively stable income for the duration, it has been observed that signing a two-year contract may have significant physical and psychological consequences, as has been previously reported.⁴⁶

Since the Maritime Labour Convention (MLC) of 2006 came into effect in August 2013, the practice of signing extended contracts has become more restricted. The MLC restricts seafarers’ length of employment to a maximum of 12 months.⁴⁷ This has resulted in considerable pressure on shipping companies (especially from the ITF) to limit the duration of contracts for seafarers operating internationally flagged vessels.⁴⁸ This is exemplified by the following: In ITF Uniform Total Crew Cost Collective Bargaining Agreement (CBA), the ITF recommends that seafarers who work onboard internationally flagged vessels⁴⁹:

“shall be engaged for 9 (nine) months and such period may be extended or reduced by 1 (one) month for operational convenience. The employment shall be automatically terminated [...] at the first arrival of the ship in port after expiration of that period, unless the company operates a permanent employment system” (ITF, 2019).

Cost-effectiveness appears to be the driving force behind the flexible employment practices in the shipping industry, including the use of third-party recruitment agencies, temporary contracts, and the absence of pension plans.⁵⁰

Despite the fact that a large number of seafarers do not consider life at sea to be a permanent career, it has been stated that some become dependent on a seafaring career and remain onboard for an extended period due to financial and familial obligations as well as their unwillingness

⁴⁶ M. Dutt, “Indian Seafarers’ Experiences of Ill- Treatment Onboard Ships”, 2015

⁴⁷ ILO, Maritime Labour Convention, 2006

⁴⁸ N. Lillie, “A global union for global workers: collective bargaining and regulatory politics in maritime shipping. New York/ London, Routledge”, 2006

⁴⁹ ITF, “ITF Uniform Total Crew Cost Collective Bargaining Agreement”, 2019, <https://www.itfseafarers.org/sites/default/files/node/resources/files/UNIFORM%20TCC%20FINAL%202019-2020.pdf>

⁵⁰ M. Bloor and H. Sampson, “Regulatory enforcement of labour standards in an outsourcing globalized industry the case of the shipping industry”, 2009

to adapt to shore life.⁵¹ In other words, seafarers can be said to face unpredictable job security and job continuity, which results in an unstable supply and rotation of the seafaring workforce in the international shipping industry. To proactively address such job instability, improvement is needed in the provision of continuous employment opportunities, reflecting different experience levels and ranks, so that the necessary supply of qualified human resources can be sustained in the shipping industry. Pursuant to a career development path model for seafarers, the uncertain job continuity they face due to prolonged unpredictable events (e.g., economic conditions, health conditions, political tensions, job discontinuity) is one of the key factors undermining job satisfaction. These factors (e.g., contract length and job security) may also affect seafarer retention and the potential recruitment of new seafarers.⁵² Therefore, guaranteeing job continuity, and thus enhancing job security, may contribute to increasing the re-entry and retention of labor in shipping, which will be of substantial aid to the supply of a competent seafaring workforce.

Moreover, according to the survey findings detailed in the 2021 BIMCO report, from the perspective of employers, shipowners and ship operators, and ship and crew managers, many concerns have been raised regarding the shortfall of qualified seafarers to meet the industry's demand. When recruiting STCW-certified seafarers, employers cited the candidates' lack of experience working on specific ship types as the greatest challenge, followed closely by competency in ship handling and technical knowledge. The report suggested that these challenges could be linked to the difficulties of meeting high commercial standards and charter party requirements, "as well as increasing technological specialization of vessels."⁵³

Furthermore, during the employment process, crewing agents act as contract mediators between shipowners and seafarers. However, these are only a few of the many obstacles and limitations that exist when attempting to hire a qualified seafarer for a particular vessel.⁵⁴ To proactively respond to and anticipate the emerging demand for qualified seafarers, especially in light of the constantly unfolding digitalization driven by technological advances in the

⁵¹ P. B. Talmor, "Careers and Labor market Flexibility in Global Industries", 2018, <https://orca.cardiff.ac.uk/id/eprint/109438/12/109438%20DEC%20PAGE%20REMOVED.pdf>

⁵² BIMCO/ICS, "Seafarer Workforce Report", 2021

⁵³ BIMCO/ICS, "Seafarer Workforce Report", 2021

⁵⁴ M. Pijevac et al., "Facilitating Seafarers Employment Using a Common Database", 2016

shipping industry, the focus is again drawn to the need for appropriate training and retraining of seafarers, which is a prime responsibility of maritime education and training (MET) providers and institutions.⁵⁵

The efficient provision of the seafaring workforce is highly contingent on the existence of adequate policies and regulations and their enforcement by domestic and international institutions. Each institutional level has distinctive functions and obligations in establishing and enforcing the minimum requirements and standard guidelines that must be complied with to ensure the safety and quality of seafarers.⁵⁶ However, the responsibility for setting mandatory and regulatory labor standards has shifted from economies to international organizations such as the International Labour Organization (ILO) and the International Maritime Organization (IMO). While this shift has chiefly been positive for the shipping industry, the authority to ensure that economies comply with the policies and regulations set by ILO and IMO remains lackluster and hinges on the voluntary cooperation of each economy, which may result in the ineffective observance of the regulations.⁵⁷

As stated above, the recent report by BIMCO (2021)⁵⁸ has underscored the need for labor stakeholders within the shipping industry to employ multiple measures that can proactively respond to and alleviate the growing issues of seafarer retention and employment barriers in the emerging international fleet amid the seafarer-shortage crisis.

Aside from these challenges, a secure job leads to further prospective maritime career development paths and thereby accelerates the sustainability of the shipping industry. As an example, ex-seafarers can transition into new careers ashore (e.g., as maritime education instructors) by utilizing the profound skills and knowledge gained through their seafaring experience.⁵⁹ Such transitions could yield promising benefits for the maritime sector. Caesar,

⁵⁵ H. M. Tusher et al., "Exploring the Current Practices and Future Needs of Marine Engineering Education in Bangladesh", 2021, <https://www.mdpi.com/2077-1312/9/10/1085>

⁵⁶ H. McLaughlin, "Seafarers and Seafaring", 2012, https://www.researchgate.net/publication/289328589_Seafarers_and_Seafaring

⁵⁷ M. H. Wanga, "Effects of the STCW 78 convention, as amended, on Kenya's maritime education and training", 2015

⁵⁸ BIMCO/ICS, "Seafarer Workforce Report", 2021

⁵⁹ ECSA SkillSea, "Future Skill and Competence Needs", 29 April 2020

Cahoon, and Fei (2016)⁶⁰ recommended actions including the creation of lifelong career plans for seafarers, enhancing their working environments, and providing them with enticing compensation and sufficient motivation⁶¹ as essential improvements to address the problems of seafarers' labor mobility in the international fleet and unfavorable working conditions aboard ships, both of which may lead to dwindling interest among prospective entrants to the seafaring profession⁶²

2.1.4. Impact of the Pandemic on Seafarers' Labor Mobility

The World Health Organization (WHO) declared the COVID-19 outbreak a global pandemic on March 11, 2020. As the pandemic developed, a number of governmental bodies imposed travel restrictions and closed their borders to mitigate and prevent the further spread of COVID-19 within their jurisdictions.⁶³ This imposed barriers to the fair employment of seafarers, with crew change and repatriation restrictions, the implementation of additional requirements and stringent policies, limited recruitment, and the closure of maritime training programs and other ancillary services.⁶⁴

In light of the challenges and barriers exerted by the pandemic, seafarers' visa appearances and appointments for signing in aboard ships were likewise missed or canceled due to quarantine measures. Moreover, the recommendations by crewing agencies to stay at home and await further announcements placed seafarers in unforeseen and difficult circumstances whereby they were obliged to wait blindly for new schedules to replace their canceled contracts.⁶⁵ These inevitable deployment delays left seafarers with little option but to take an extended vacation. However, this significantly jeopardized the livelihoods of those on temporary contracts, placing

⁶⁰ L.D. Caesar et al., "Understanding and managing the complexity of retention issues for 21st century seafarers in the global shipping industry", 2016

⁶¹ K. Nigel, "Innovation needed to meet crew shortage", 2008

⁶² L.D. Caesar et al., "Understanding and managing the complexity of retention issues for 21st century seafarers in the global shipping industry", 2016

⁶³ ILO, "Seafarers and fishers: Providing vital services during the COVID-19 pandemic", 2020, accessed 08 June 2022, https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_743344/lang--en/index.htm

⁶⁴ Y. F. Torib, "Seafaring at the height of Covid-19", 25 June 2021, <https://www.manilatimes.net/2021/06/25/business/maritime/seafaring-at-the-height-of-covid-19/1804612>

⁶⁵ IMO "Frequently asked questions about how COVID-19 is impacting seafarers", accessed 10 June 2022, <https://www.imo.org/en/MediaCentre/HotTopics/Pages/FAQ-on-crew-changes-and-repatriation-of-seafarers.aspx>

them in perilous situations with unsecured and postponed personal incomes.⁶⁶ In a recent survey conducted as part of research into seafarers' experiences during the COVID-19 pandemic,⁶⁷ many also highlighted a perceived lack of support from shipping companies, emphasizing problems such as a lack of information, conflicting information, lack of communication, or high demands and pressure, as well as challenges related to expired or extended contracts, financial problems, and job insecurity.

The unprecedented challenges and restrictions imposed by the pandemic have worsened the precarious labor conditions within the shipping industry and further precipitated the job insecurity (e.g., the uncertainty of temporary contracts, lack of income, anxiety about the future) that represents an acute source of job stress for seafarers.⁶⁸ This is no small matter for the industry, as job stress is classified as a critical determinant of seafarers' job satisfaction,⁶⁹ That is, high worker satisfaction renders possible the stable supply of a highly effective seafaring workforce with advanced productivity.⁷⁰ In this regard, proactive measures and initiatives to reduce workplace stress and increase job satisfaction among seafarers are deemed necessary, especially in the context of responding to potential unexpected pandemics in the future⁷¹, and are highly correlated with the swift facilitation of labor mobility for seafarers.

APEC acknowledged the importance of future epidemic preparedness when it highlighted “the need for equitable, reliable, and sustainable access to medicines, medical equipment, and health technologies”^{72 73} by improving supply chain resilience in advance of possible future

⁶⁶ Y. F. Torib, “Seafaring at the height of Covid-19”, 25 June 2021, <https://www.manilatimes.net/2021/06/25/business/maritime/seafaring-at-the-height-of-covid-19/1804612>

⁶⁷ B. Pauksztat et al., “Seafarers' experiences during the COVID-19 pandemic”, 2020, https://commons.wmu.se/lib_reports/67/

⁶⁸ Sangeetha V. and D Gomathy, “Workplace Stress Among Seafarers in Indian Maritime Industry: An Empirical Study”, 2018, https://iaeme.com/MasterAdmin/Journal_uploads/JOM/VOLUME_5_ISSUE_6/JOM_05_06_002.pdf

⁶⁹ K.F. Yuen et al., “Determinants of job satisfaction and performance of seafarers”, 2018, https://www.researchgate.net/publication/323297516_Determinants_of_job_satisfaction_and_performance_of_seafarers

⁷⁰ K. Kasemsap, “The Significance of Job Satisfaction in Modern Organizations”, 2017, <https://www.igi-global.com/chapter/the-significance-of-job-satisfaction-in-modern-organizations/180485#:~:text=High%20job%20satisfaction%20effectively%20leads,higher%20revenues%20for%20the%20organization.>

⁷¹ UN, A/RES/75/27, 11 December 2020, <https://digitallibrary.un.org/record/3895278?ln=en>

⁷² APEC, “Empowering Telehealth Solutions In APEC”, December 2021, <https://www.apec.org/publications/2022/01/empowering-telehealth-solutions-in-apec-study-on-the-policy-landscape-for-telehealth-in-the-apec-region>

⁷³ APEC, “Research Outcomes: Summary of Research Projects 2021”, 2022, <https://www.apec.org/publications/2022/06/research-outcomes-summary-of-research-projects-2021>

epidemics. The cross-border movement of the seafaring workforce within the APEC region is deemed to be more vulnerable during outbreaks of cross-border diseases,⁷⁴ as evidenced through previous experiences of emerging infectious diseases including the SARS outbreaks in 2002–2003, the highly pathogenic Asian avian influenza A (H5N1), and strains of H1N1, as well as Middle East Respiratory Syndrome (MERS). Given that approximately 40 percent of infected COVID-19 cases originate from the APEC region, APEC member economies must make concerted endeavors to strengthen their universal healthcare systems and ensure the robust cross-border movement of seafarers, given their vital role in transporting vaccines and medical equipment during the pandemic.⁷⁵

The continually evolving nature of COVID-19 has prompted growing concern over renewed challenges and emerging variants such as Omicron, which have the potential to considerably worsen the plight of seafarers.⁷⁶ Despite MLC 2006, Regulation 2.4, Paragraph 2 stipulating that “Seafarers shall be granted shore leave to benefit their health and well-being and consistent with the operational requirements of their positions,” in March 2022, the Neptune Declaration reported an increase in the number of seafarers continuing to work aboard vessels beyond the expiry of their contracts over the previous month. This underscores the continued precarious labor conditions at sea, which consistently require governments to comply to the fullest extent with the provisions of MLC 2006, without prejudice to the proportional and specific measures taken to minimize the risk of contagion.⁷⁷ With crew changes now difficult or even impossible, shore-leave non-existent, ships being detained for having seafarers onboard beyond the expiry of their contracts, and many seafarers considering leaving the industry, shipowners are gradually turning to automation as a potential resilience measure.⁷⁸

⁷⁴ APEC, “Increasing Pandemic Preparedness and Prevention in the APEC Region”, 2021, <https://www.apec.org/publications/2021/06/increasing-pandemic-preparedness-and-prevention-in-the-apec-region>

⁷⁵ APEC, “APEC in the Epicentre of COVID-19”, 2020, <https://www.apec.org/publications/2020/04/apec-in-the-epicentre-of-covid-19>

⁷⁶ UNCTAD, “World Economic Situation Prospects” 2022, <https://www.un.org/development/desa/dpad/publication/world-economic-situation-and-prospects-2022/>

⁷⁷ UNCTAD, “Facilitating crew changes and repatriation of seafarers during the COVID-19 pandemic and beyond”, 02 March 2021, accessed 10 June 2022, <https://unctad.org/news/facilitating-crew-changes-and-repatriation-seafarers-during-covid-19-pandemic-and-beyond>

⁷⁸ Inmarsat, N Gardner et al., 2021, https://safety4sea.com/wp-content/uploads/2021/10/Thetius-Inmarsat-A-Changed-World-2021_10.pdf

In terms of emerging global technology trends towards digitalization amid Industry 4.0, COVID-19 has been called “the great accelerator.”⁷⁹ The shipping industry is no exception, and there is no doubt that further change will occur.⁸⁰ While the digitalization and automation in Industry 4.0 chiefly imply industrial modernization, experts anticipate that it will also have a vast impact on seafarers’ employment onboard contemporary ships.⁸¹ The advancement of digital and autonomous technology in the shipping industry has pervasively supervised existing labor and generated new jobs to align with the demands of the new era.⁸²

Furthermore, accelerated digitalization and automation have, to an increasing extent, prompted the implementation and utilization of digital technologies and remote services (e.g., pilotage, surveying, crew training, and official examinations). While the IMO is strongly committed to addressing the digital and automated advancement of the maritime industry to enhance its overall efficiency and sustainability,⁸³ seafarers, who, according to the IMO, are at the core of shipping’s future, are foreseen to be one of the groups most affected by the industry’s ongoing evolution.⁸⁴

Ship automation has long been a subject of contention. Seafarers are increasingly expected to adjust and advance their skill sets along a more technologically oriented trajectory to remain abreast of modern industry needs.⁸⁵ Despite the profound advantages that digitalization and automation bring to the world of shipping, deficiencies including skill gaps and labor market instability have conspired to make the industry reluctant to proceed with a smooth transition towards the digital era.⁸⁶ Although the paradigm of shipping is shifting towards the unmanned and remote operation of ships (e.g., the introduction of Maritime Autonomous Surface Ships),

⁷⁹ J. A. Amoah et al., “COVID-19 and digitalization: The great acceleration”, 2021, <https://www.sciencedirect.com/science/article/pii/S0148296321005725>

⁸⁰ Inmarsat, N Gardner et al., 2021, https://safety4sea.com/wp-content/uploads/2021/10/Thetius-Inmarsat-A-Changed-World-2021_10.pdf

⁸¹ M. Kitada and B. Talmor, “Maritime Digitisation and Its Impact on Seafarers’ Employment from a Career Perspective”, 2019

⁸² HSBA Hamburg School of Business Administration, “Seafarers and Digital Disruption”, 2018

⁸³ Inmarsat, N Gardner et al., 2021, https://safety4sea.com/wp-content/uploads/2021/10/Thetius-Inmarsat-A-Changed-World-2021_10.pdf

⁸⁴ M. Kitada and B. Talmor, “Maritime Digitisation and Its Impact on Seafarers’ Employment from a Career Perspective”, 2019

⁸⁵ M. Kitada and B. Talmor, “Maritime Digitisation and Its Impact on Seafarers’ Employment from a Career Perspective”, 2019

⁸⁶ Inmarsat, 2021, https://safety4sea.com/wp-content/uploads/2021/10/Thetius-Inmarsat-A-Changed-World-2021_10.pdf

a recent report by Inmarsat (2021)⁸⁷ highlighted that as of today, the safe and efficient operation of ships continues to require the presence onboard of highly skilled seafarers.

As illustrated above, the COVID-19-driven transformation of the shipping industry has redefined the imperative to reimagine seafarers' employment and enhance the sustainability of the labor market for decent work and economic growth in the post-pandemic era. To strengthen the resilience of seafarer employment and the labor market amid the pandemic, greater efforts and unity both within and beyond the APEC economies are crucial. APEC and its economies must commit to achieving preparedness to prevent and confront any impediments exerted by future pandemics and epidemics.⁸⁸ Likewise, it is essential to reinforce adequate and pragmatic policies to create the sustainable cross-border movement of seafarers in the labor market. Such policy measures must be equitable, resilient, and capable of safeguarding seafarers from vulnerable situations imposed by a pandemic without creating additional hurdles for them. Furthermore, to align with the rapid paradigm shift of the shipping industry towards digitalization, maritime stakeholders (e.g., governmental bodies, policymakers, and MET providers) from within and beyond the APEC region have a mutually indispensable role in reshaping and strengthening the future competencies of seafarers to foster inclusion in the labor market of the shipping industry.

2.2. Challenges And Barriers To Seafarers' Labor Mobility

Seafaring is one of the most globalized labor markets across all industries. This tendency toward globalization is only expected to accelerate, as can be observed aboard today's merchant shipping vessels, which comprise multicultural crew members from all over the world.⁸⁹ Aboard ships under the Korean flag, for example, personnel from officers to ratings include not only Korean crew members, but also Filipinos, Malaysians, and Indonesians. The mixture of crew members originating from different economies becomes more prevalent in the context of the global shipping industry.⁹⁰

⁸⁷ Inmarsat, 2021, https://safety4sea.com/wp-content/uploads/2021/10/Thetius-Inmarsat-A-Changed-World-2021_10.pdf

⁸⁸ UN, A/RES/75/27, 11 December 2020, <https://digitallibrary.un.org/record/3895278?ln=en>

⁸⁹ C. Bagoulla and R. Guillotreau, "Shortage and labor productivity on the global seafaring Market", 2017, <https://ideas.repec.org/p/hal/journal/halshs-01469666.html>

⁹⁰ T. T. Nguyen et al., "Current Challenges in the Recruitment and Retention of Seafarers: An Industry Perspective from Viet Nam", 2014, <https://www.sciencedirect.com/science/article/pii/S2092521214000315>

Seafarers in this type of international working environment generally obtain their Certificate of Competency (CoC), or license, in their home economies, based on local and international laws for seafarer education and training. With licenses issued by their home economies, seafarers can work on foreign vessels mostly via international networks of crewing agencies and management companies.⁹¹ However, several barriers hindering the mobility of seafarers across regions have been reported in this process, including a lack of recognition of each economy's local training programs and certifications, differences in legal systems in terms of seafarer recruitment, and cultural/linguistic diversity.⁹² The disparities created by these obstacles have led to a mismatch between supply and demand in the local and international maritime labor markets.⁹³ That is, even while the seafaring labor market is truly global in the sense that employers and seafarers can approach each other in a somewhat free and open manner, it is also greatly segmented rather than cohesive or uniform.⁹⁴ Leggate and McConville (2002)⁹⁵⁹⁶ alluded to this segmentation by highlighting the complexities of the seafaring labor market as “a diversity of markets cutting across and interacting on one another in an international environment,” and thus “deeply segmented by (domestic) boundaries with a multiplicity of direct and indirect barriers to free movement of labor within the industry.”

The series of barriers preventing seafarers' global entry to the international shipping market should therefore be examined from this perspective, specifically by focusing on the challenges facing seafarers in the APEC economies. For this purpose, the obstacles and challenges will be discussed in greater detail at the individual, industrial, and economic levels.

⁹¹ ILO, “Recruitment and retention of seafarers and the promotion of opportunities for women seafarers”, 2019, https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/meetingdocument/wcms_664163.pdf

⁹² C. Bagoulla and R. Guillotreau, “Shortage and labor productivity on the global seafaring Market”, 2017, <https://ideas.repec.org/p/hal/journal/halshs-01469666.html>

⁹³ C. Bagoulla and R. Guillotreau, “Shortage and labor productivity on the global seafaring Market”, 2017, <https://ideas.repec.org/p/hal/journal/halshs-01469666.html>

⁹⁴ P. Leong, “Understanding the seafarer global labor market in the context of a seafarer ‘shortage’”, 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

⁹⁵ H. Leggate and J. McConville, “The Economics of the Seafaring Labor market, In Grammenos ”, 2002

⁹⁶ P. Leong, “Understanding the seafarer global labor market in the context of a seafarer ‘shortage’”, 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

2.2.1. Individual Level

Seafaring has a distinct set of characteristics that distinguishes it from other professions. These include physically hard work environments, potentially dangerous duties, long working hours, and high levels of stress and weariness.⁹⁷ Seafaring is at times referred to as a “lonely life.”⁹⁸ However, notwithstanding all these complications, the demand remains to enter the international labor market by choosing a career as a seafarer. The major reported challenges faced by individual seafarers are as follows: skills and education, lack of information, and unstandardized labor conditions.⁹⁹

⁹⁷ K. Urdahl, “Seafarers’ mental health and wellbeing”, 26 Nov 2019, <https://www.gard.no/web/updates/content/28743345/seafarers-mental-health-and-wellbeing>

⁹⁸ K. Urdahl, “Seafarers’ mental health and wellbeing”, 26 Nov 2019, <https://www.gard.no/web/updates/content/28743345/seafarers-mental-health-and-wellbeing>

⁹⁹ Skillsea, “Current Skills Needs, Reality and Mapping”, 17 March 2020, [https://www.skillsea.eu/images/Public_deliverables/D1.1.2_SkillSea_Current%20skills%20needs%20\(Reality%20and%20Mapping\)_final%20version.pdf](https://www.skillsea.eu/images/Public_deliverables/D1.1.2_SkillSea_Current%20skills%20needs%20(Reality%20and%20Mapping)_final%20version.pdf)

Skills and education

First and foremost, the limitation of personal skills and educational backgrounds is regarded as a root cause of restrictions on the movement of seafarers into more globalized shipping markets.¹⁰⁰ The shipping companies that pay a higher wage generally require a higher standard of qualifications and skills. However, seafarers from developing economies cannot easily meet this required standard due to an absence/shortage of training facilities and quality programs. In particular, a lack of modern training infrastructure (e.g., training vessels and technical navigational equipment) in the APEC region has been highlighted as one of the obstacles preventing young marine leaders from completing advanced education and training.¹⁰¹

The determining factor in overcoming restricted cross-labor mobility at the individual level has become not only a series of hard skills, as required by the STCW of IMO,¹⁰² but also a set of soft skills including English language capabilities and leadership and management skills in a cross-cultural onboard working environment.¹⁰³ Previous research¹⁰⁴ has highlighted that while seafarers can be fully equipped with the hard skills required by international conventions and hold a decent university diploma, they often perceive invisible barriers in accessing the international shipping industry without a satisfactory level of soft skills. This is especially true because English is set as the working language in international shipping, and therefore multilingual and cultural competencies onboard are regarded as pivotal.¹⁰⁵

¹⁰⁰ Z. Zhao et al., "Impediments to free movement of Chinese seafarers in the maritime labor market", 2020

¹⁰¹ T. T. Nguyen et al., "Current Challenges in the Recruitment and Retention of Seafarers: An Industry Perspective from Viet Nam", 2014, <https://www.sciencedirect.com/science/article/pii/S2092521214000315>

¹⁰² L. D. Caesar et al., "Challenging the current paradigms of seafarer training and careers", 2014, https://www.researchgate.net/publication/290295146_Challenging_the_current_paradigms_of_seafarer_training_and_careers

¹⁰³ P. Leong, "Understanding the seafarer global labor market in the context of a seafarer 'shortage'", 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

¹⁰⁴ T. T. Nguyen et al., "Current Challenges in the Recruitment and Retention of Seafarers: An Industry Perspective from Viet Nam", 2014, <https://www.sciencedirect.com/science/article/pii/S2092521214000315>

¹⁰⁵ L. D. Caesar, "The Global Shortage of Ship Officers: An Investigation of The Complexity of Retention Issues Among Australian Seafarers", 2016, https://eprints.utas.edu.au/23038/1/Caesar_whole_thesis.pdf

Lack of information

Digital information technologies improve reemployment rates after the first several months of unemployment.¹⁰⁶ However, a sophisticated online platform for employment information has yet to be developed for the global seafaring industry. One major reason for this may be the many different forms of data required for the recruitment process, which include a wide array of information at both an individual level (e.g., types of ships, seafarer's rank, nationality, past experiences, and qualification/certificates) and an economic level (e.g., a status of mutual recognition of seafarers' CoC). Specifically, CoCs cannot be recognized without mutual agreement between economies, while qualifications obtained by seafarers in their home economies may not be valid when applying to shipping companies registered in other regions.¹⁰⁷ For example, the economies that have reached an agreement with the Republic of Korea (e.g., Germany, the United Kingdom, and Finland) recognize the Korean CoC; however, others (e.g., Italy or the United States) do not. As such, the scope of information required for a job application is prohibitively large and detailed, yet some of the key information (e.g., MoU status between economies) is not readily available for individual seafarers to access. Even when pieces of the required information can be found scattered across the many relevant websites, seafarers continue to find it challenging to obtain information with a high level of clarity due to the opaque recruiting procedure.¹⁰⁸ Furthermore, highly limited internet connections at sea present an additional barrier for seafarers in terms of staying reliably connected with and updated on the latest information regarding the labor market.

Concerning ship-to-shore labor mobility, there is a strong need to expand the range of information, including work opportunities in the broader maritime sector, in terms of where seafarers' skills and experiences gained at sea can be acknowledged and appreciated.¹⁰⁹ Seafarers must fully comprehend the potential work opportunities and career demands onshore

¹⁰⁶ Grtzgen et al., "Do Digital Information Technologies Help Unemployed Job Seekers Find a Job? Evidence from the Broadband Internet Expansion in Germany", 2021, <https://docs.iza.org/dp11555.pdf>

¹⁰⁷ R. Ziarati, "What Is Wrong? A Review of National, European and International Efforts in Improving the Standard and Quality of Maritime Education and Training", 2013, https://marifuture.com/Publications/Papers/What_Is_Wrong_A_Review_of_National_European_and_International_Efforts_in_Improving_the_Standard_and_Quality_of_Maritime_Education_and_Training.pdf

¹⁰⁸ Y. F. Torb, "Bringing maritime recruitment online", 27 October 2021, <https://www.manilatimes.net/2021/10/27/business/maritime/bringing-maritime-recruitment-online/1819856>

¹⁰⁹ S. Mgaga, "Towards a career capital approach in explaining career development patterns amongst female seafarers in Durban.", 2015, http://www.imla.co/sites/default/files/conference_proceedings_20-06-15.pdf#page=112

before they can make a career transition from ship to shore ¹¹⁰, especially in today's fast-paced and competitive business environment. This understanding would enable seafarers to set clear goals along their professional paths while also considering the various possible constraints, and further provides them with opportunities to learn ahead of time about the transferable qualifications or skills required onshore. By preparing in this manner, seafarers would gain the possibility of broader career options and the ability to properly prepare the qualifications required to develop a solid career plan in the long term.

In light of these facts, the discussion outlined above must be made available in a digital version for every seafarer in need in order to facilitate labor mobility. As stated by Diakogiannis (2021), ¹¹¹ “maritime crewing, and the actors involved in it, can benefit a lot from technology and data, such as a digital labor market place.”

Unstandardized labor conditions

Ships, in general, have crews comprising members of several nationalities who must work as one cohesive unit to ensure their safe functioning. Employing workers from a variety of economies, however, poses significant challenges such as communication difficulties, disengagement, and discrimination based on ethnicity, culture, and religious differences.¹¹² . One of the first points to make is that a strong tendency remains to grant unfair opportunities to seafarers based on their origins.¹¹³ For example, certain nationalities are preferred when recruiting ratings, while others are preferred when hiring officers. Officer preference may be divided further into two sub-categories: juniors and seniors.¹¹⁴ Another factor to consider is the use of different salary rates according to nationality, even when the same work performance is demonstrated for the same company.¹¹⁵ This practice severely hinders access to equitable and

¹¹⁰ N. Acomi and A. Ovidiu, “Diversification of Seafarers’ Employability Paths”, 04 September 2016, https://www.europeanproceedings.com/files/data/article/45/1158/article_45_1158_pdf_100.pdf

¹¹¹ Y. F. Torb, “Bringing maritime recruitment online”, 27 October 2021, <https://www.manilatimes.net/2021/10/27/business/maritime/bringing-maritime-recruitment-online/1819856>

¹¹² M. E. Clements, “On board communication problems due to the lack of a common language”, 1996, P4, https://commons.wmu.se/cgi/viewcontent.cgi?article=1910&context=all_dissertations

¹¹³ L. D. Caesar et al., “Exploring the range of retention issues for seafarers in global shipping: opportunities for further research”, 2015, <https://link.springer.com/article/10.1007/s13437-015-0078-0>

¹¹⁴ P. Leong, “Understanding the seafarer global labor market in the context of a seafarer ‘shortage’”, 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

¹¹⁵ C. Bagoulla and R. Guillotreau, “Shortage and labor productivity on the global seafaring Market” 2017, <https://ideas>.

fair opportunities for seafarers from certain geographical regions, despite their expertise and qualified experience.¹¹⁶ Last but not least, cultural differences affecting communication, working behaviors, and safety onboard can be barriers for seafarers opting to join overseas shipping companies.¹¹⁷ In an onboard working environment, strong social and professional links among crew members are essential; the consequences of a team's failure to work well together can result in significant dangers, potentially even resulting in fatal marine accidents.¹¹⁸

To summarize, unstandardized labor conditions, such as unequal opportunities, unequal salaries based on nationality, and the difficulties engendered by a multicultural onboard working environment, can make seafarers feel uneasy and unsafe when working onboard ships. This can limit their labor mobility between different economies on an individual level.

2.2.2. Industrial Level

The IMO was established to oversee regulations that include measures to improve the safety and security of international shipping and prevent pollution from ships, which governments are responsible for observing and enforcing in their respective jurisdictions.¹¹⁹ When a government acknowledges the IMO Convention, it consents to incorporate it into public law and uphold its validity as with other domestic laws.¹²⁰ The concern is that a certain number of economies lack the aptitude, experience, and assets vital to achieving adequate domestic implementation, resulting in a gap between the international laws and their domestic policies. In this part, therefore, the challenges and barriers that hamper seafarers' labor mobility across the APEC region will be discussed by focusing specifically on the regulations of local crew agencies/companies, including retention policies. The different recruitment requirements of different shipping companies will also be further highlighted, along with the shortage of well-

repec.org/p/hal/journal/halshs-01469666.html

¹¹⁶ J. Markkula, "'We move the world': the mobile labor of Filipino Seafarers", 2021, <https://www.tandfonline.com/doi/full/10.1080/17450101.2021.1880129?scroll=top&needAccess=true>

¹¹⁷ C. Bagoulla and R. Guillotreau, "Shortage and labor productivity on the global seafaring Market", 2017, <https://ideas.repec.org/p/hal/journal/halshs-01469666.html>

¹¹⁸ The Nautical Institute, R. Hone, Navigation Accidents and their Causes: Chapter 3 Bridge resource management, 2015

¹¹⁹ IMO, "IMO and its role in protecting the world's oceans", accessed 10 June 2022, <https://www.imo.org/en/MediaCentre/HotTopics/Pages/oceans-default.aspx>

¹²⁰ IMO, "Implementation, Control and Coordination", accessed May 15 2022, <https://www.imo.org/en/OurWork/MSAS/Pages/ImplementationOfIMOInstruments.aspx>

trained and qualified seafarers in the industry.

Company regulations and policies including retention policies

According to Zhao, Walters, and Shan (2020),¹²¹ some crewing agencies regulate the advancement of seafarers in the labor market by retaining their CoCs. This not only violates the Labor Contract Law (2006) but also limits seafarers' options for employment on other ships, both domestically and internationally. In the worst cases, some agencies also withhold a percentage of seafarers' earnings as "financial security," forcing them to either relinquish their certificates or lose their withheld earnings when they sign out from their duties at sea. This bizarre approach makes it difficult for extraordinarily skilled and qualified seafarers to move across the global maritime sector in a flexible manner. Another approach employed by state-owned crewing agencies (SCAs) is to impose a monetary penalty if seafarers leave before the end of their contracts (ibid.). Such a penalty is intended to reclaim training expenses, such as manning agencies' payments to maritime colleges and cadet training costs. Since SCAs contribute the most to education and training expenditures, it is deemed permissible for them to recuperate these costs, either entirely or partially, if seafarers fail to meet their obligations during their service years. However, due to the substantial monetary penalty imposed upon their resignation, many seafarers find it difficult to move to other shipping companies. In addition to demonstrating SCAs' retention controls, Zhao et al. (2020)¹²² found that seafarers were aware that by leaving their SCAs and becoming freelancers, they would become exposed to a variety of vulnerabilities and risks, including the loss of government assistance, employer stability, wage security, and safe working conditions. It is also true that shifting these seafarers' employment beyond domestic borders would represent a loss for local crew agencies. Nevertheless, to ensure a stable supply and demand of seafarers in the APEC region, which in turn facilitates economic growth, such issues concerning retention methods must be elevated further to achieve a more coordinated network throughout the global maritime industry.

Recruitment requirements

¹²¹ Z. Zhao et al. "Impediments to free movement of Chinese seafarers in the maritime labor market ", 2020, <https://journals.sagepub.com/doi/abs/10.1177/1035304620937881>

¹²² Z. Zhao et al. "Impediments to free movement of Chinese seafarers in the maritime labor market ", 2020, <https://journals.sagepub.com/doi/abs/10.1177/1035304620937881>

Different shipping businesses and economies have different seafarer recruitment requirements.¹²³ The recognition of seafarers' qualifications and skills varies depending on the demands of the shipping industry, which results in seafarers being retrained to acquire the requisite education to perform a specific task onboard or operate a specific type of vessel.¹²⁴ Leong (2012)¹²⁵ points out that a company's unwillingness or inability to provide training berths can act as a barrier to entry into the shipping labor market, given seafarers' obligation to complete a year of onboard training in order to meet the mandatory requirements to obtain their certification. Entry to ships as a junior officer is hampered because cadets are largely unable to satisfy the essential at-sea service requirement for them to receive their expert ticket as a ship officer (i.e., there are limited vacancies for practical cadet training onboard).¹²⁶ Some emerging economies struggle to provide adequate training infrastructure, like training berths, thus limiting the number of seafarers taught annually by MET institutions.¹²⁷ Furthermore, the high cost of education and training fees prevents shipping companies from recruiting seafarers from underdeveloped economies, which have relatively shorter education and training.¹²⁸

2.2.3. Economic Level

The IMO authorized STCW in 1978, and there have been two major modifications since then, in 1995 and 2010. The purpose of the Convention was to establish a set of international regulations for basic seafarer training, certification, and watchkeeping.¹²⁹ Individual economies have previously devised such standards for seafarers, including both officers and ratings, albeit with little coordination with the practices of other economies.¹³⁰ Administrations

¹²³ D. Cristina, "Seafarers' Employment Procedures in Crewing Companies", 2012, <https://www.researchgate.net/publication/249000109>

¹²⁴ E. I. Etman, "The impact of STCW implementation on Maritime Administrations, MET Institutions and Shipping Companies", 2018, https://www.researchgate.net/publication/329862569_The_Seafarers'_Training_and_Education

¹²⁵ P. Leong, "Understanding the seafarer global labor market in the context of a seafarer 'shortage'", 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

¹²⁶ P. B. Talmor, "Careers and Labor market Flexibility in Global Industries", 2018, <https://orca.cardiff.ac.uk/id/eprint/109438/12/109438%20DEC%20PAGE%20REMOVED.pdf>

¹²⁷ T. T. Nguyen et al., "Current Challenges in the Recruitment and Retention of Seafarers: An Industry Perspective from Viet Nam", 2014, <https://www.sciencedirect.com/science/article/pii/S2092521214000315>

¹²⁸ N. C. Phewa, "Maritime education and training (MET) funding models in different jurisdictions: challenges and opportunities in South Africa", 2019, https://commons.wmu.se/cgi/viewcontent.cgi?article=2212&context=all_dissertations

¹²⁹ IMO, "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)", accessed 10 June 2022, <https://www.imo.org/en/OurWork/HumanElement/Pages/STCW-Conv-LINK.aspx>

¹³⁰ P. Leong, "Understanding the seafarer global labor market in the context of a seafarer 'shortage'", 2012, <https://>

and international training institutes must meet or exceed the minimum STCW criteria to encourage professional seafaring qualifications that are recognized throughout the global maritime industry. This enables a uniform standard of maritime competence to be applied, regardless of a seafarer's training background or degree. However, despite the existence of international conventions, the mutual recognition of seafarers' qualifications and certificates across regions is not ubiquitous.¹³¹ This has significantly hampered the seamless facilitation of the international labor market for seafarers. Since a lack of mutual recognition for seafarers' qualifications and the underdevelopment and protectionism of domestic regulatory infrastructure are all facets that hinder seafarers' cross-border labor mobility, each of these issues is discussed further below.

Lack of mutual recognition for seafarers' qualifications

As previously noted, domestic authority certifications must meet the IMO's minimum standards and, ideally, be accepted by all IMO member states. Not only must maritime officers be properly qualified for each level of service onboard, but their certification must also specify the capacity in which they are certified to attend, the areas to which they are permitted to navigate, and the tonnage or propulsion constraints of the ships they are competent to operate.¹³² In reality, however, certifications issued by one economy are not universally recognized or transferable to other flags.¹³³ This is primarily because there are numerous industries, organizations, and professional bodies within the APEC region whose interpretations, regulations, training methods, examination requirements, and levels of competence do not match and are entirely dependent on the specific requirements and circumstances of each economy. Canada, for example, does not automatically recognize certificates that were granted by foreign authorities. In other words, a foreign CoC is not automatically accepted in Canada. Under the Immigration Act, a foreign seafarer to serve under Canada's flag, they must first apply to become a permanent resident in Canada and then carry

orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf

¹³¹ P. Leong, "Understanding the seafarer global labor market in the context of a seafarer 'shortage'", 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

¹³² IMO, International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, (STCW) 1978, as amended in 1995/2010

¹³³ Ziarati et al., "Into the Future – Challenges for MET in the 21st Century - Removing Barriers to Mobility of Seafarers", 2013, https://www.researchgate.net/publication/263681950_Into_the_Future_-_Challenges_for_MET_in_the_21st_Century_-_Removing_Barriers_to_Mobility_of_Seafarers

their immigration documentation, as well as authentic records of sea service, among other information, with them when they arrive.

Despite the implementation of the international Convention, discrepancies in seafarers' competencies and qualifications persist, leading many in the industry to question the efficacy of the Convention in ensuring a certain level of standardized quality among seafarers.

¹³⁴ Because of this discrepancy, if a mutual CoC agreement has not been reached, seafarers are frequently prohibited from working on ships flying different flags, even if they have been trained for that specific type of ship. ¹³⁵ Given that most economies have surpluses and shortages of officers and ratings, it is apparent that the current system is not effective in alleviating shortages by redeploying surpluses.

Underdevelopment and protectionism of a domestic regulatory infrastructure

Ziarati et al. (2013)¹³⁶ polled members of the maritime community (e.g., schools, charter firms, and skippers) to elicit their viewpoints on the lack of mutual recognition of seafarer qualifications among economies. The results of their poll indicated that lack of recognition is primarily due to protectionism and disinformation on the part of the different economies' authorities, followed by degree of qualification, disinterest, language, and educational quality. In other words, barriers to seafarer mobility are created by authorities acting in their own self-interest and being uninformed about international certification standards.

According to Zhao, Walters, and Shan (2020),¹³⁷ the lack of a domestic regulatory infrastructure and welfare support system for seafarers, as well as the deficient implementation of MLC 2006, limits the degree of transformation possible in the seafaring labor market. Under such social, economic, and regulatory conditions, seafarers appear to have few options but to

¹³⁴ P. Leong, "Understanding the seafarer global labor market in the context of a seafarer 'shortage'", 2012, <https://orca.cardiff.ac.uk/id/eprint/52229/1/PhD%20thesis%20Priscilla%20Leong.pdf>

¹³⁵ P. Kingsland, "Where would a no-deal Brexit leave UK seafarers?", 17 December 2018, accessed 10 June 2022, <https://www.ship-technology.com/analysis/brexit-impact-on-uk-seafarer-certificates/>

¹³⁶ Ziarati et al., "Into the Future – Challenges for MET in the 21st Century - Removing Barriers to Mobility of Seafarers", 2013, https://www.researchgate.net/publication/263681950_Into_the_Future_-_Challenges_for_MET_in_the_21st_Century_-_Removing_Barriers_to_Mobility_of_Seafarers

¹³⁷ Z. Zhao et al., "Impediments to free movement of Chinese seafarers in the maritime labor market", 2020, <https://journals.sagepub.com/doi/abs/10.1177/1035304620937881>

continue in their own domestic labor markets. As a result, the government is able to control the majority of their domestic maritime workforce, thus prohibiting seafarers from entering the international labor market and, in turn, acting as an economic barrier to their labor mobility.

2.3. Efforts And Measures For Enhancing Seafarers' Labor Mobility

2.3.1. International Standards and Requirements for Seafarers

Under the theme of “safe, secure, and efficient shipping on clean oceans,” IMO has worked to develop the maritime transportation industry by making the development of seafarer skills and competency one of their top priorities. For this purpose, the International Convention on STCW was adopted in 1978, came into force in 1984, and was amended in 1995 and 2010, to assist, monitor, and harmonize MET for seafarers across the world.¹³⁸ As the mandatory minimum standards for seafarers' education, certification, and watchkeeping, economies in the APEC region are obliged to meet or exceed STCW for their seafarers engaged in domestic or international voyages.

Beyond the STCW, which regulates seafarers' minimum competencies, the MLC, which was established by the ILO in 2006, details the minimum standards for seafarers' working conditions onboard a ship (e.g., contracts of employment, payment, manning levels, welfare, and even guaranteed access to information during the seagoing period). This is to ensure that the rights and needs of seafarers are safeguarded and free from opportunities for exploitation. The MLC sets out a single, internationally recognized source of regulation and guidance, which all ships entering ports of parties to the Convention must comply with or face possible consequences.

2.3.2. Perceived Gap Between Recruitment Standards and Seafarer Qualifications

While there is always a need for skilled seafarers, supplying seagoing resources that meet the industry standards remains a challenging issue.¹³⁹ For example, tanker charterers may not only

¹³⁸ S. Mazhari, “Competency of Merchant Ship Officers in the Global Shipping Labor market: A Study of the ‘Knowing-Doing’ Gap”, 2018

¹³⁹ ICS, “New BIMCO/ICS Seafarer Workforce Report warns of serious potential officer shortage”, 28 July 2021, <https://www.ics-shipping.org/press-release/new-bimco-ics-seafarer-workforce-report-warns-of-serious-potential-officer-shortage/>

require specific types of certifications applicable in the tanker industry but also stipulate the minimum number of years spent working in similar types of vessels or positions.¹⁴⁰ To further illustrate this point, seafarers outside the tanker domain may encounter practical limitations in terms of assuming the responsibilities of an officer aboard a tanker, since STCW requires a minimum of three months' apprenticeship and a course of specialized training and education for tanker operation. As a consequence of restrictions like these, once seafarers begin working on a certain kind of vessel, they prefer to stay in that domain instead of moving to another. This means that shipping companies are always in need of seafarers with specific skills to satisfy the requirements for operating their vessels.¹⁴¹ These unique characteristics of seafaring, along with stringent industrial standards, have created challenges for seafarers seeking professional advancement and employment.

The growing set of maritime skills required by evolving technologies and new regulations is another factor to consider. With the increasing movement towards decarbonization, for example, 224 ships have already been categorized as “gas ready.”¹⁴² The rise in the number of these ships will result in increased demand for seafarers qualified to work on them, as defined in STCW Chapter V-3, “Mandatory Minimum Requirements for the Training and Qualifications of Masters, Officers, Ratings and Other Personnel on Ships Subject to the International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code).” As a result, demands for training in this segment are also expected to increase. In a similar vein, the Polar Code and the Ballast Water Management Convention (BWM Convention) have both been implemented in the last five years as the maritime industry has attempted to further reduce the environmental impact of shipping.¹⁴³ However, the supply of qualified seafarers has not kept pace with the demand for their services.

All of these items have proven to be challenging for marine industries, resulting in a shortage of available seafarers at times of demand. While these advancements in the maritime industry are intended to improve environmental and safety standards, they are also increasing pressure

¹⁴⁰ OCIMF, “Ship Inspection Report (SIRE) Programme, VIQ 7”, 22 February 2019, <https://www.ocimf.org/programmes/sire/>

¹⁴¹ ILO, “MLC 2006; Regulation 1.3 – Training and qualifications”, 2006

¹⁴² BIMCO/ICS, “Seafarer Workforce Report”, 2021

¹⁴³ BIMCO/ICS, “Seafarer Workforce Report”, 2021

on the seafarer supply–demand balance due to additional ship- and sector-specific requirements.

2.3.3. Future Competence of Seafarers

Technological advancements, notably the introduction of new digital industrial technologies known as Industry 4.0, are transforming the future of the maritime industry at a quicker rate than ever before.¹⁴⁴ The rapid technical improvements in maritime transportation, which are only expected to continue, will necessitate the hiring of a new workforce that is competent in using the newly introduced technology.¹⁴⁵ Furthermore, the growing digitalization and automation of the shipping business will necessitate newer and more technically sophisticated knowledge and experience than is currently available in the industry.

As stated in previous sections, the acceleration of digitalization and automation amid Industry 4.0 will dramatically affect employment patterns in the maritime industry in the forthcoming years. It will also revolutionize the skill sets and training requirements for seafarers, not only in the immediate but also in the mid and long-term future.

The maritime industry will face two significant challenges as a result of this rapid change in labor and employment patterns.¹⁴⁶ The first will be a worsening global scarcity of qualified seafarers, and the second will be an assessment of future skill requirements in light of new technology. These challenges will force policymakers into a race against time, both in terms of investing in the skills needed for future ships and rebuilding a workforce with future-proof capabilities. From the standpoint of MET institutes, the significant need to allocate more resources to respond to new and changing training needs is becoming increasingly apparent, in addition to the need to educate graduates with suitable and necessary skills that are entirely compatible with future skill requirements.

This global phenomenon was well illustrated in research conducted by the International Association of Maritime Universities. In March 2018, a poll was conducted to determine the

¹⁴⁴ ECSA SkillSea, "Future Skill and Competence Needs", 29 April 2020

¹⁴⁵ WMU, "Transport 2040: Automation, Technology, Employment - The Future of Work", 2019, https://commons.wmu.se/lib_reports/58/

¹⁴⁶ K. Cicek et al., "Future Skills Requirements Analysis in Maritime Industry", 2019, <https://www.sciencedirect.com/science/article/pii/S1877050919312116>

seafarer skills required under Business 4.0, targeting 214 responders from across the world representing diverse segments of the maritime workforce.¹⁴⁷ The results showed that the technical competencies regulated under STCW continued to play a significant short-term, mid-term, and long-term role in the maritime industry. On the other hand, the emerging challenges in Industry 4.0 mean that future seafarers must be competent in the areas of technological awareness, computing and informatics skills, and environmental and sustainability awareness and concerns. These results imply that future maritime education should focus on bridging gaps between shore-based technological capabilities and seagoing qualities, in order to equip students with transferable skills that apply to a broader range of potential occupational profiles.

¹⁴⁷ K. Cicek et al., "Future Skills Requirements Analysis in Maritime Industry", 2019, <https://www.sciencedirect.com/science/article/pii/S1877050919312116>

SECTION 3: RESEARCH ANALYSIS

3.1. Methodology

To collect data to satisfy the aims of the study, multifaceted questionnaire surveys were undertaken at three levels (individual, industrial, and economic) for seafarers (143 respondents from the global shipping industry, selected at random), members of the shipping industry (29 companies), and maritime administrators (10 economies), respectively. Questionnaires based on a five-point Likert scale were created to ascertain the key barriers to the labor mobility of seafarers throughout the APEC region. Statistical analysis of the data was carried out using a quantitative approach to generalize the findings and ensure that each participant had an equal probability of being included in the research sample. The findings in this paper are reported in terms of frequencies, percentages, standard deviation, mean, T-test, and basic descriptive analysis. This allows the results to be scaled up and worldwide solutions to be established.

The online survey comprised closed-ended and open-ended questions written in plain language and included a range of question types grouped into four parts:

- **Section A** contained demographic information such as the participant's position, age, gender, certificate, and other personal information;
- **Section B** featured questions on a five-point Likert scale concerning barriers to the seafarers' labor mobility, and potential solutions to increase labor mobility within APEC economies;
- **Section C** had multiple-choice questions on the participant's perceptions and attitudes towards labor mobility;
- **Section D** included an open-ended question to elicit thoughts on how to increase labor mobility among seafarers.

The survey attempted to accomplish the study's purpose by addressing the following questions:

- What are the challenges that seafarers face concerning labor mobility?
- What barriers do seafarers encounter to join foreign shipping companies?
- What barriers do shipping companies and manning agencies encounter to employ foreign seafarers?
- What barriers do economies and policymakers encounter to deal with labor mobility?

- What skills are needed for seafarers to improve their career development?
- What solutions and suggestions are needed to handle the issue of labor mobility?
- What strategies are used to deal with labor mobility among seafarers in APEC economies?

In order to ensure the validity of the survey, each questionnaire statement was developed in consultation with a panel of academics and maritime professionals. Prior to dissemination, the questionnaire's contents were evaluated for their language, accuracy, completeness, and relevance to the study's objectives. The surveys were evaluated in a pilot study with 20 acting seafarers to confirm the research instruments, including the questions, survey format, and survey distribution channels.

3.2. Research Analysis

3.2.1. Individual Barriers

3.2.1.1. Demographic Characteristics of Respondents

The demographic characteristics of the respondents are presented in the following order: gender, nationality, age, employment, working department, and rank onboard.

- **Gender:** 143 respondents
 - Male: 141 respondents (98.6%)
 - Female: 2 respondents (1.4%)
- **Nationality**
 - APEC region: 70 seafarers (48.95%) from nine (9) member economies (American, Chinese, Filipino, Japanese, Korean, Malaysian, Papua New Guinean, Russian, and Singaporean)
 - Non-APEC region: 73 seafarers (51.04%) from nine (9) economies (Argentinian, Bangladeshi, Burmese, Croatian, Danish, Egyptian, Indian, Iraqi, Jordanian, Kuwaiti, Lebanese, Pakistani, Polish, Portuguese, Romanian, Sri Lankan, Syrian, Turkish, Ukrainian, and Yemeni)
- **Age**
 - Between 20 and 30 years: 38 respondents (26.57%)

- Between 30 and 40 years: 52 respondents (36.36%)
- Between 40 and 50 years: 37 respondents (25.87%)
- Above 50 years: 16 respondents (11.19%)
- **Department**
 - Deck: 95 respondents (66.43%)
 - Engine: 48 respondents (33.57%)
- **Rank**
 - Master: 20 respondents (13.99%)
 - Chief officer: 22 respondents (15.38%)
 - 2nd officer: 32 respondents (22.38%)
 - 3rd officer: 22 respondents (15.38%)
 - 4th officer: 38 respondents (26.57%)
 - 5th officer: 9 respondents (6.29%)
- **Current employment status**
 - Employed (84.7%)
 - Unemployed (15.3%)
- **Experience of joining other companies**
 - fewer than three companies (48.7%)
 - between three and five companies (32.6%)
 - more than five companies (18.8 %)

According to the BIMCO/ICS 2021 Seafarer Workforce Report, women presently account for only 1.2 percent of the global seafarer workforce. In this sense, the low female response rate in this study (2 females, 1.4%) accurately reflects the barriers experienced by female seafarers in the global maritime industry. The distribution rate of APEC respondents (48.95%) in comparison to non-APEC respondents (51.04%) can also be considered quite valid when considering that 21 APEC economies account for approximately 56 percent of the world's seafaring population (BIMCO, 2015), as clearly illustrated in the literature review.

3.2.1.2. Analysis of Individual Barriers

Motivation for pursuing a seafaring career

On the first question about the *reasons for pursuing a seafaring career*, the following responses

were provided in the order of the highest mean value.

Table 1. Reasons for pursuing a career in a seafaring profession

No.	Elements	Mean
1	Good pay	3.69
2	Travel around the world	3.38
3	Prestigious position	3.27
4	Flexibility and long leave	3.23
5	Interested in sea-based jobs	3.16
6	To get more sea experience for shore jobs	3.00
7	The only available option	2.74
8	Family tradition	2.72

As a seafarer, the most important factor in deciding to go into the profession was the good pay (M=3.69), which came with the added benefit of having the opportunity to travel the world (M=3.27). Furthermore, having the career opportunity to advance to a renowned and respected position (M=3.27) within the maritime industry as an officer was a distinct advantage. Moreover, due to the nature of shipboarding, flexibility in work and extended vacations (M=3.23), which are non-fixed working patterns, were regarded as positive qualities. The respondents also stated that the seafaring profession was attractive and appealing in and of itself (M=3.00), which served as a motivating factor in their decision to pursue a sea-based career in the maritime industry. A further motivation was to gain nautical expertise in preparation for a future transition to land using the experience gained at sea, rather than simply continuing to board a ship on a regular basis (M=3.00). In terms of job selection, on the other hand, there was a relatively low level of involuntary considerations (e.g., no options, and family traditions). In other words, seafarers may purposefully choose to work as maritime experts in the field of ship operation, which offers a relatively good wage and the possibility of switching to a land-based job later in their careers. The results are further illustrated in the following:

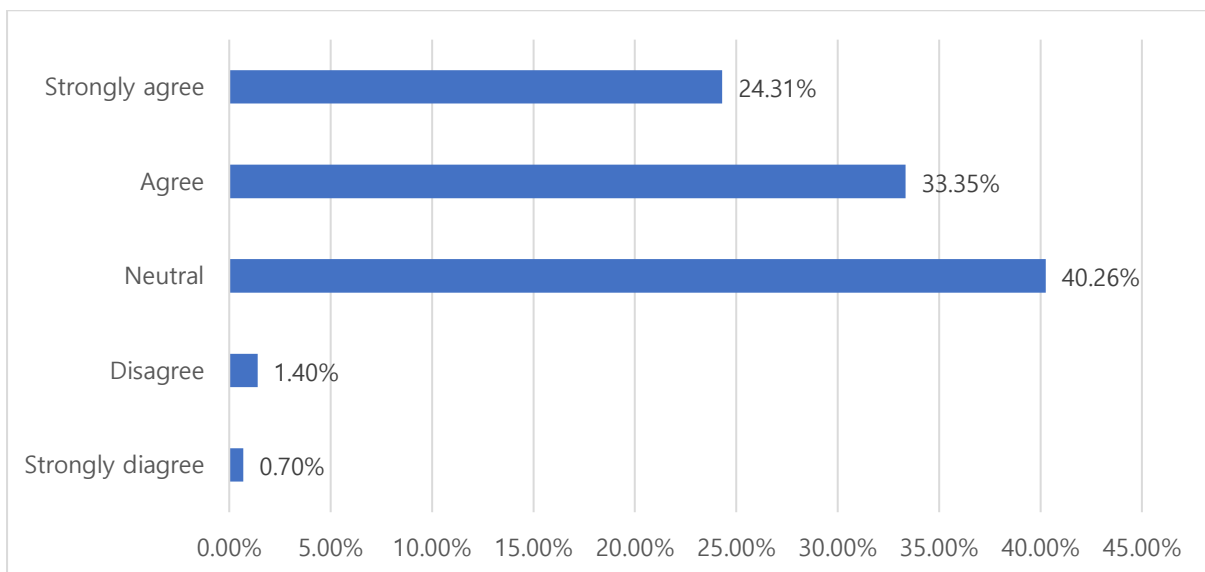
Figure 1. Mean value of motivations for seeking a career in a seafaring profession



Willingness to join a foreign shipping company on an international scale

The following question, on *the seafarers' willingness and/or level of agreement to join or continue their careers at international foreign shipping companies*, was asked using a 5-point Likert scale. The results are shown in Figure 2.

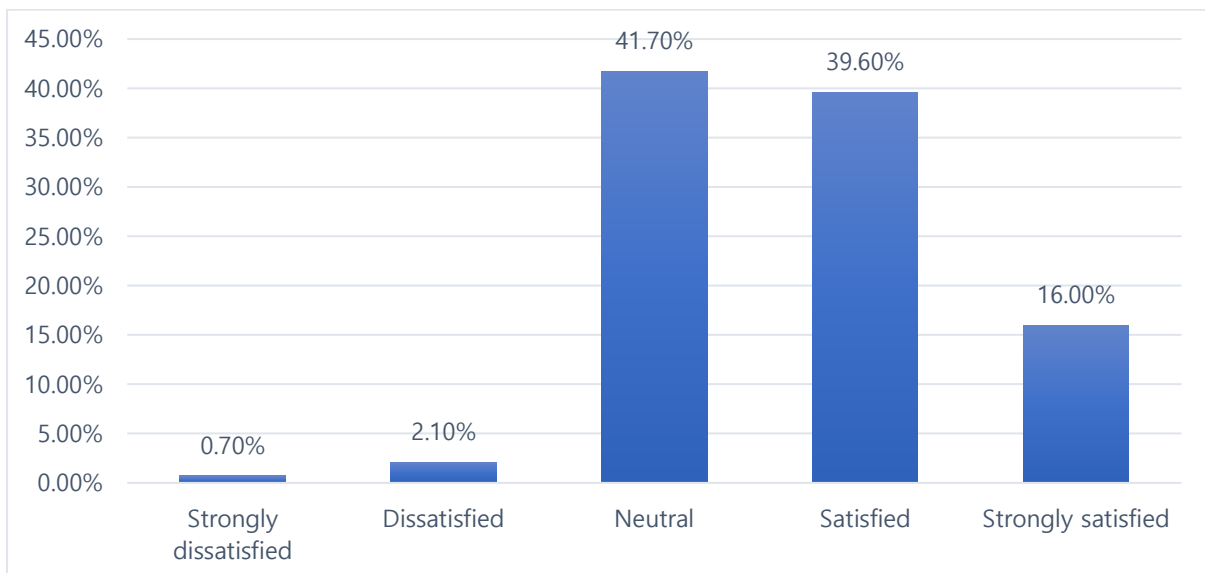
Figure 2. Seafarers' willingness and/or level of agreement to join or continue their careers at international foreign shipping companies



As illustrated, more than half of the respondents expressed agreement (57.66% in total, comprising strongly agree (24.31%) and agree (33.35%)). This was 27 times higher than the rate of disagreement (2.1% in total, comprising strongly agree (0.70%) and disagree (1.40%)). Even after accounting for the neutral position (40.26%), the percentage of respondents who expressed a favorable attitude toward joining an international shipping company is judged to demonstrate a high degree of inclination.

The next question inquired about *the seafarers' level of satisfaction while working with international foreign shipping companies*. On a scale of 1 to 5, with 1 representing strongly dissatisfied and 5 representing strongly satisfied, more than half of the respondents generally reported being satisfied with working with international foreign shipping companies, at a total rate of 55.60 percent (strongly satisfied (16%) and satisfied (39.6%)). When compared to the general level of dissatisfaction, which was 9.1 percent (strongly dissatisfied (7%) and dissatisfied (2.1%)), a significantly higher degree of satisfaction was stated. The results are shown in Figure 3.

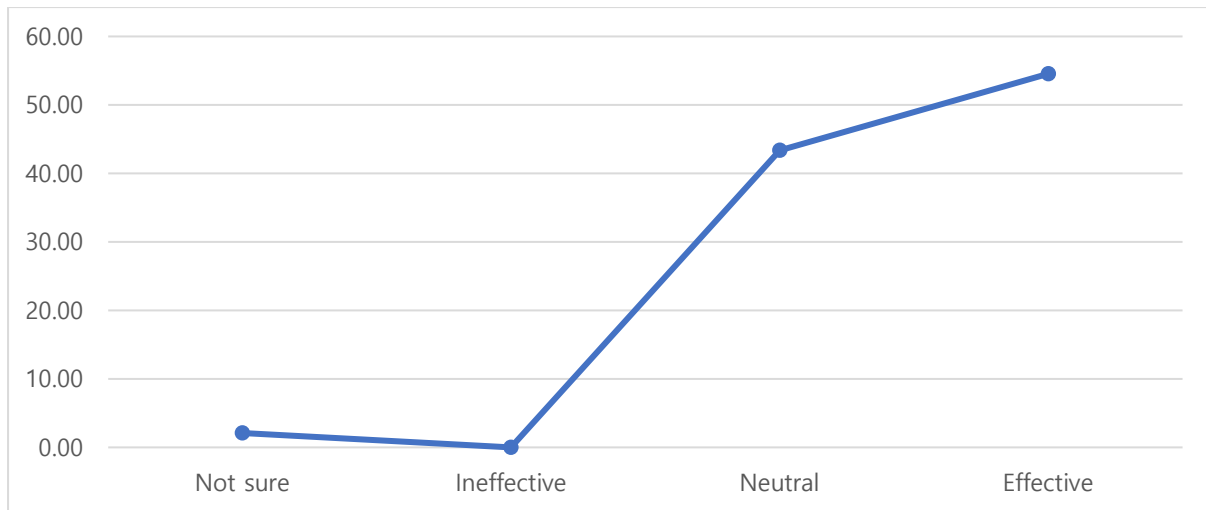
Figure 3. Seafarers' level of satisfaction while working with international foreign shipping companies



Finally, when asked about the effectiveness of working with foreign shipping companies in terms of advancing their seafaring careers, more than half of the respondents indicated that it was effective (54.55%), followed by neutrality (43.36%). Given that none of the respondents

considered it to be ineffective (0%), a significant proportion of the respondents agreed that the experience of working with foreign shipping companies was effective in developing their career path. Figure 4 illustrates these results.

Figure 4. The effectiveness of working with foreign shipping companies in terms of advancing their seafaring careers



Three of the questions regarding *the seafarers' intentions to start or continue their employment with an international shipping company* received largely positive responses: Their level of favorable agreement for joining stood at 57.66 percent, their level of positive satisfaction was 55.60 percent, and working with foreign shipping companies in terms of expanding their seafaring careers was assessed to be effective (54.55%).

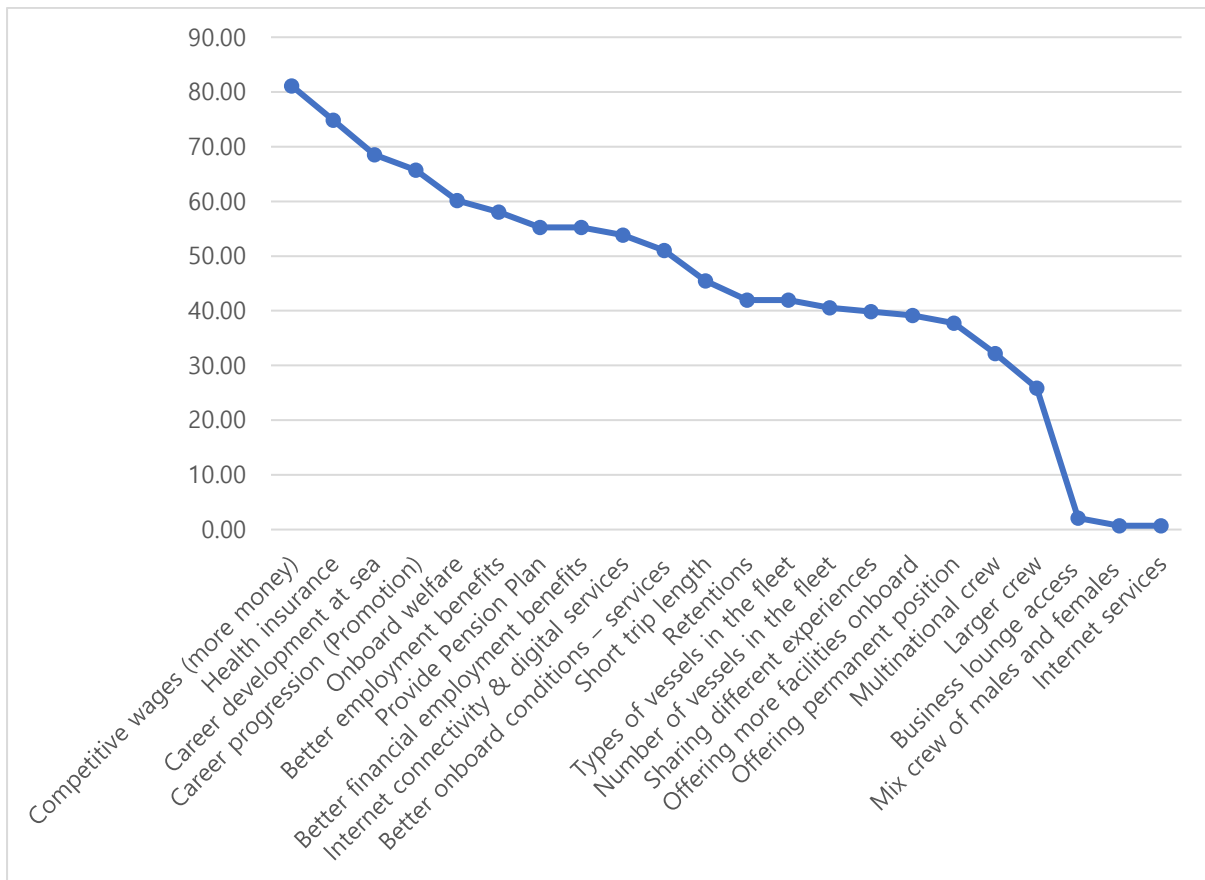
Factors that motivate seafarers to work for international shipping companies

The following question sought to ascertain which elements the seafarers deemed critical when joining and/or re-joining international shipping companies. The 22 elements determining this aspect were carefully selected from the pilot survey and included greater compensation, welfare benefits, opportunities for career development, and organizations of crew members. The multiple-choice nature of this question enabled the respondents to select more than one option from each of the statements. The results as set out in Table 2 and illustrated in Figure 5 highlight the types of individual considerations that the seafarers considered in this regard.

Table 2. Critical elements when joining and/or re-joining international shipping companies

No.	Factors	Percentage
1	Competitive wages (more money)	81.12
2	Health insurance	74.83
3	Career development at sea	68.53
4	Career progression (promotion)	65.73
5	Onboard welfare	60.14
6	Better employment benefits	58.04
7	Provision of a pension plan	55.24
8	Better financial employment benefits	55.24
9	Internet connectivity and digital services	53.85
10	Better onboard conditions – services	51.05
11	Short trip length	45.45
12	Retentions	41.96
13	Types of vessels in the fleet	41.96
14	Number of vessels in the fleet	40.56
15	Sharing different experiences	39.86
16	Offering more facilities onboard	39.16
17	Offering a permanent position	37.76
18	Multinational crew	32.17
19	Larger crew	25.87
20	Business lounge access	2.1
21	Mixed crew of males and females	0.7

Figure 5. Key considerations when joining and/or re-joining international shipping companies



As indicated in Table 2, the most highly ranked values comprised those that were closely correlated with **economic rewards**. These included competitive wages (81.12%), a pension scheme (55.24%), and better financial employment benefits (55.24%).

It is also worth noting that **the provision of professional development opportunities** that are not limited to offshore activities at sea but also include the expansion of onshore employment prospects, appears to be rather critical. The results show that career development at sea (68.50%) and the provision of career progression opportunities (65.73%), which results in a higher retention rate, were found to be significant. Aside from that, the ability of shipping companies to provide a wide range of professional experience on different types of vessels, with varying amounts, was also considered in the context of the seafarers' professional growth.

Finally, **the welfare package** was regarded as one of the most important considerations in determining career choices in the international seafaring industry. As previously mentioned, MLC, 2006 established minimum global standards for seafarers' living and working conditions,

including employment conditions, accommodation, recreational facilities, food/catering, health protection, medical care, and welfare and social security protection. Consequently, specific aspects of the welfare package (e.g., onboard welfare (60.14%) and better onboard conditions – services (51.05%)) must first be examined to ensure their compliance with MLC, prior to being expanded as extra welfare benefits.

As highlighted in the previous section, the seafarers exhibited a significant tendency to choose a career at sea and to begin that career intending to become maritime experts in the field of ship operation with the possibility of transitioning to a job on land later in their careers. In addition, their readiness to join a foreign shipping company on a global scale was deemed to be considerable. This appeared to reflect their high levels of satisfaction while working with international shipping companies. Furthermore, there was general agreement that working for international shipping companies provided essential experience for their professional advancement in the global maritime industry.

Barriers to entry into international shipping companies

As a means of evaluating *the barriers that individuals face when attempting to enter the international shipping industry outside their regional boundary*, the expected causes of these were identified. A total of 13 determining factors were carefully selected after a review of the literature and a pilot survey and included, among others, nationality, onboard experiences, and the mutual recognition of CoCs. Additionally, soft skills such as language competence, cultural awareness, and religious tolerance were considered. The multiple-choice structure of this question permitted the selection of more than one response for each factor. The data presented in Table 3 illustrate the various types of barriers encountered by seafarers in this regard.

Table 3. Specific barriers encountered by seafarers

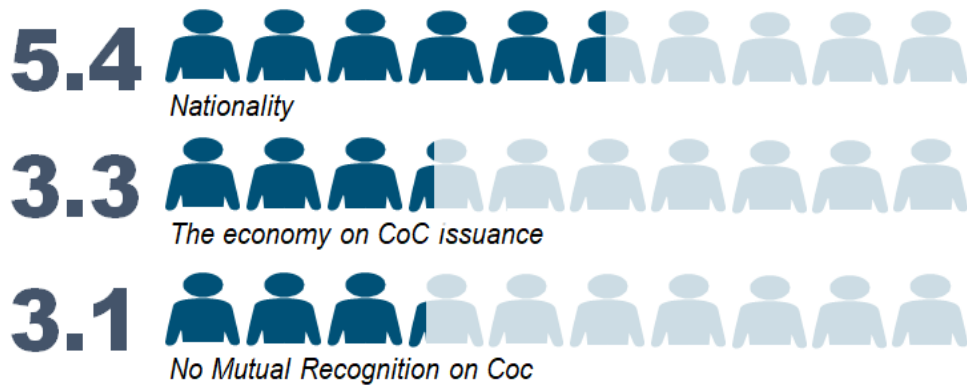
No.	Factors	Respondents	Percentage
1	Nationality	78	54.55
2	Age	76	53.15
3	Onboard experiences	75	52.45
4	Medical fitness	71	49.65

5	Limited experience with a specific type of vessel	62	43.36
6	Language	60	41.96
7	Lack of training requirements imposed by flag state or shipping company beyond STCW	54	37.76
8	Requested wages and benefits	52	36.36
9	The economy of CoC issuance	48	33.57
10	No mutual recognition of CoC	45	31.47
11	Religion	43	30.07
12	References from previous shipping companies	37	25.87
13	Culture	34	23.78

To begin, the most critical aspects to consider **in terms of cross-labor mobility were nationality**, the CoC-issuing economy, and the absence of mutual recognition of CoCs. From one-third to more than half of the respondents identified these three factors as barriers to their participation in international shipping markets. In other words, such issues cannot be resolved solely through the capabilities of individual seafarers or the provision of more advanced education and training; rather, they require institutional collaboration among member economies. As clearly stated in the literature review, the seafarer recruitment process involves multiple types of data, not only at the individual level (e.g., ship types, seafarers' rank, nationality, previous experience, and qualifications/certifications) but also at the economic level (e.g., mutual recognition of seafarers' CoC). In the absence of mutual agreement on CoCs across economies, the qualifications that seafarers obtain in their home economies are not recognized when applying for shipping companies registered in other regions. In this regard, information on APEC economies' mutual recognition of CoCs must be expressly provided by a reputable source, and measures must be undertaken to promote collaboration between member economies. A further consideration is the continuing strong tendency for seafarers to be offered unfair opportunities depending on their origins, such as preferential economies for ratings or junior/senior officers, as stated earlier. Specifically, further investigation is needed into the use of different salary scales based on nationality, even in cases of proven comparable work performance for the same company. This practice considerably limits the access of seafarers from certain geographical locations to equitable and fair chances, despite their

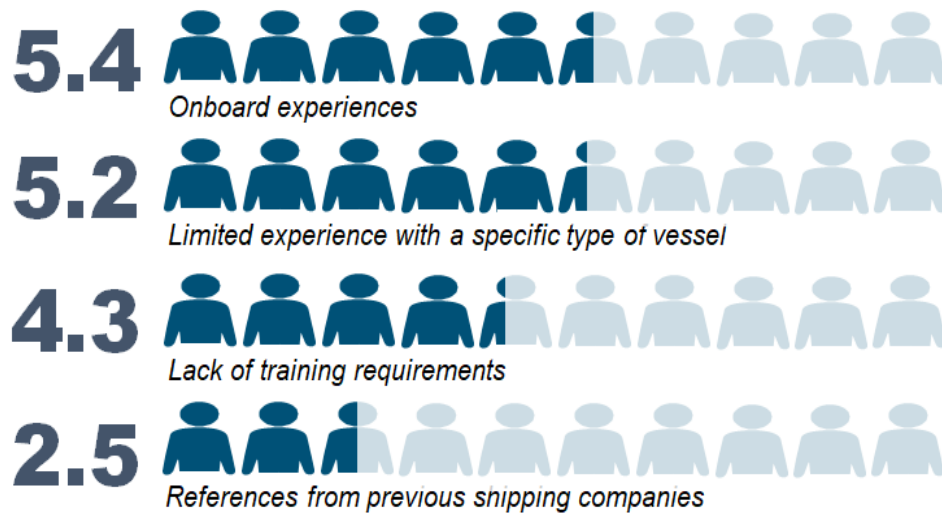
competence and professional experience. Figure 6 provides a visualization of the key barriers encountered by seafarers.

Figure 6. Key barriers encountered by seafarers in terms of cross-labor mobility



In terms of career and educational/training experiences, the following factors were considered: onboard experiences, limited experience with a specific type of vessel, lack of further training requirements imposed by the flag state or shipping company beyond STCW, and references from previous shipping companies. These key barriers are illustrated in Figure 7.

Figure 7. Key barriers encountered by seafarers in terms of career and educational/training experiences



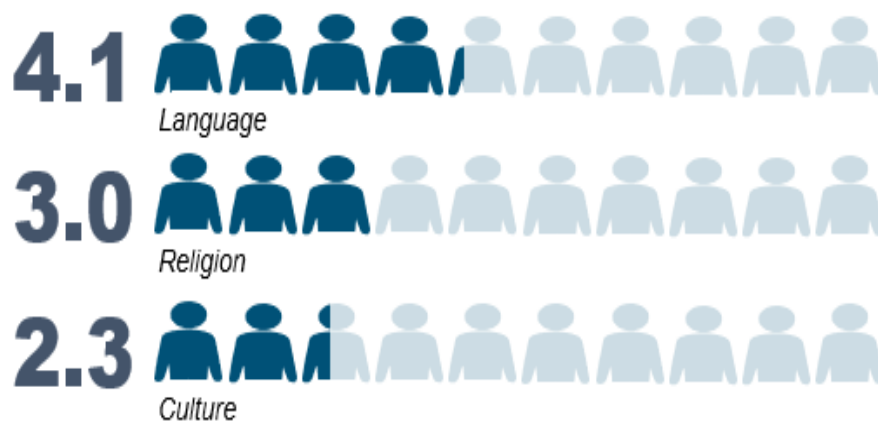
First and foremost, it is vital to assess how to increase the chances of acquiring adequate and relevant experiences onboard to prepare for and continue with a future career path as a seafarer. During this stage, therefore, it is critical to consider both onboard experience as an apprentice officer (i.e., the mandatory requirements to become an officer under international convention) and the acquisition of the requisite onboard experience (e.g., to board a specific type of vessel such as a tanker) at the officer level. Given that these career and educational experiences require not only the fulfillment of minimum STCW requirements but also the attainment of the appropriate onboard experience when seafarers wish to change their ship type to a more promising field of employment, a systematic support system should be established to facilitate this.

Following that, consideration should be given to the education and training requirements of each flag economy or shipping company in addition to the minimum standards of the STCW Convention, or to the requirements of specific ship types (e.g., tankers) that are experiencing a seafarer shortage and thus offer more job opportunities in the global shipping market. As noted in the literature review, employers, shipowners and operators, and ship and crew managers have expressed growing concern about the shortage of seafarers, citing the greatest difficulty in recruiting suitable seafarers as a lack of experience working on specific ship types, followed

by ship handling competency and technical knowledge. Furthermore, the concerns are usually connected with the obstacles that seafarers encounter in meeting high commercial standards and charter party requirements, as well as the increasing technological specialization of vessels in the maritime industry. Consequently, although a huge number of seafarers aspire to participate in international shipping markets, considerable practical education and training barriers between shipowners/crewing agencies and seafarers must be addressed to match skilled seafarers with companies in need. More significantly, shipping companies that pay a larger salary require a higher level of qualifications and skills in general, which seafarers in developing economies cannot readily meet due to a lack of training facilities and quality programs. To anticipate and respond to the increased need for skilled seafarers, the emphasis is once again placed on the critical nature of adequate seafarer training and retraining.

As stated earlier in the literature review, some of the obstacles relating to soft skills include communication issues, disengagement, and prejudice based on differences in ethnicity, culture, and religion. Figure 8 illustrates some of the key barriers. A general support system must therefore be offered to strengthen soft skills such as language proficiency, cultural awareness, and religious tolerance.

Figure 8. Key barriers encountered by seafarers in terms of soft skills



Even though these factors were deemed to be relatively minor barriers in comparison to the other issues discussed previously, when candidates possess comparable levels of hard skills such as qualifications and certifications, their soft skills can become a deciding factor in an

international cross-cultural working environment. Given that these soft skills cannot be acquired overnight and take considerable time to develop to a satisfactory level, a long-term system for the assimilation of multilingual and cultural competencies onboard must be considered to avoid these acting as invisible barriers to entry into the international shipping industry.

Finally, to facilitate ship-to-ship and ship-to-shore labor mobility, it is necessary to establish a career development support system that includes a variety of information on job prospects in the broader marine sector, both offshore and onshore. This would not only provide compensation and benefits but also assist employees in managing their former shipping business references following the conclusion of their contracted tenure.

This would ultimately lead to the recognition and appreciation of seafarers' talents and experiences gained at sea, as well as possible job prospects and career demands onshore. By doing so, seafarers could improve their chances of anticipating future requirements when transitioning from ship to shore, particularly in today's fast-paced shipping business environment. This would enable seafarers to establish a clear objective for their professional pathways while considering various potential constraints; it would also offer them the opportunity to learn in advance about the transferrable skills or expertise required onshore. Thus, seafarers would be able to pursue a greater range of employment opportunities with the qualifications necessary for the formation of a sound career plan over the long term.

3.2.1.3. Summary of Seafarers' Cross-border Labor Mobility

- There is a significant tendency among seafarers to choose a career at sea and to begin that career intending to become maritime experts in the field of ship operation with the possibility of transitioning to a job on land later in their careers.
- The most important factors in deciding to become a seafarer were the decent pay, the opportunity to travel the world, and the chance to advance to a prestigious and respected position within the maritime industry. Given the low degree of involuntary considerations, it is safe to infer that the vast majority of seafarers begin their careers

at sea on their own initiative, intending to eventually become high-ranking experienced officers and/or move to become maritime experts onshore.

- The seafarers expressed a generally positive attitude regarding their willingness and/or level of agreement to join or continue their careers, their level of satisfaction, and the efficacy of working with foreign shipping companies in terms of advancing their seafaring careers at international foreign shipping companies.
- The factors that inspired the seafarers to join international shipping companies, in order, were the economic rewards; the provision of professional development opportunities that are not limited to offshore activities at sea but also include the expansion of onshore employment prospects; and the welfare package.
- Individual barriers to entry into international shipping companies were identified as nationality, the economy of CoC issuance, and the absence of mutual recognition of CoCs. Neither the abilities of individual seafarers nor the provision of more advanced education and training is sufficient to overcome these specific barriers; rather, they can only be overcome through coordination across member economies.
- Further barriers related to individuals' educational and training experiences, such as onboard training, limited experience with a specific type of vessel, the absence of additional training requirements imposed by the flag state or shipping company beyond STCW, and references from previous shipping companies.
- Another barriers arise from the individual's educational and training experiences, such as onboard training, limited experience with a specific type of vessel, the absence of additional training requirements imposed by the flag state or shipping company beyond STCW, and references from previous shipping companies.
- Seafarers face challenges in gaining the expertise required to achieve high commercial standards, as well as the marine industry's growing technological specialization, which

requires regional infrastructure and significant levels of expenditure on individuals' training.

- An individual's set of soft skills may be the decisive factor in a cross-cultural international work environment, even when candidates possess equivalent levels of hard skills such as qualifications and certificates. Consideration must be given to establishing a long-term framework for the assimilation of linguistic and cultural competencies onboard to prevent these factors from acting as invisible barriers to entry into the international shipping industry.
- A career development support system that incorporates a variety of information on job opportunities in the wider maritime sector, both offshore and onshore, must be established in the long run to promote ship-to-shore labor mobility.

3.2.2. Industrial Barriers

3.2.2.1. Demographic Characteristics of Respondents

Industrial barriers posed by the shipping industry and recruitment agencies were analyzed through a questionnaire survey. A total of 29 out of 33 respondents replied and were considered valid for analysis. The demographic characteristics of the respondents are presented as follows:

- **Numbers:** 29 valid out of 33 shipping companies and manning agencies
- **Ownership of the company**
 - APEC region: 13 from 7 member economies (44.83%)
(Hong Kong, China; Malaysia; People's Republic of China; Republic of Korea; Singapore; the Philippines; and Viet Nam)
 - Non-APEC region: 16 seafarers (55.17 %) from 8 economies
(United Arab Emirates; Egypt; Germany; India; Kuwait; Oman; Poland; and United Kingdom)
- **Officer pool**
 - 0–250 officers: 8 (27.59%)
 - 250–500 officers: 7 (24.14%)
 - 500–700 officers: 6 (20.69%)
 - 750–1000 officers: 1 (3.45%)
 - More than 1000 officers: 7 (24.14%)
- **Number of vessels**
 - 1–10 vessels: 8 (27.6%)
 - 10–20 vessels: 2 (6.9%)
 - 20–30 vessels: 3 (10.3%)
 - 30–40 vessels: 4 (13.8%)
 - More than 40 vessels: 12 (41.4%)
- **Types of vessels**
 - 94 vessels comprising 15 types
(i.e., Car carrier, chemical tanker, heavy-lift, livestock carrier, project cargo vessel, cable laying vessel, passenger vessel, general cargo, ro-ro vessel, LNG vessel, supply vessel/tug, bulk carrier, gas vessel, container vessel, and oil tanker)

3.2.2.2. Analysis of Industrial Barriers

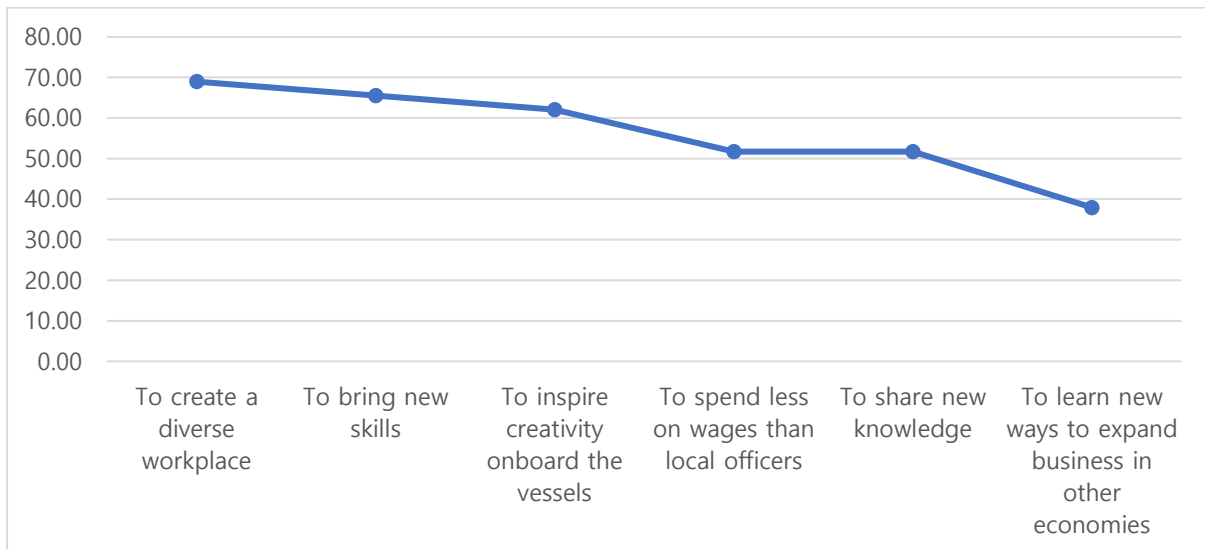
Reasons for hiring foreign officers from different regions

Based on the questions generated from the pre-interviews and pilot surveys, six major reasons for hiring foreign officers from different regions were identified, as shown in Table 4 and Figure 9. The multiple-choice structure of this question enabled more than one response to be selected for each factor. The findings highlight *the varied reasons for hiring foreign officers from diverse locations*.

Table 4. Reasons for hiring foreign officers from diverse locations

	Reasons	No. of respondents	Percentage
1	To create a diverse workplace	20	68.97
2	To bring new skills	19	65.52
3	To inspire creativity onboard the vessels	18	62.07
4	To spend less on wages than for local officers	15	51.72
5	To share new knowledge	15	51.72
6	To learn new ways to expand business in other economies	11	37.93

Figure 9. Reasons for hiring foreign officers from diverse locations



Almost two-thirds of the shipowners and agencies stated that the most important reasons for employing foreign seafarers were to create a broader and more diverse global onboard environment (e.g., to create a diverse workplace (68.97%), to inspire creativity onboard the

vessels (62.07%)), the acquisition of new skills and up-to-date knowledge (e.g., to bring new skills (65.52%) and share new knowledge (51.72%)), and financial benefits such as the ability to offer slightly lower salaries than those offered to seafarers in their home economy (51.72%). In this regard, the cultural diversity of ships and the globalization of operations were deemed to be more important aspects than the operational cost efficiency achieved through personnel cost reductions.

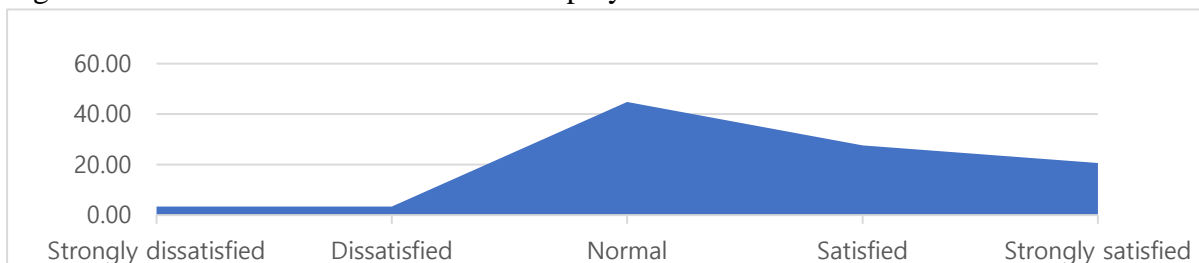
Level of satisfaction with the employment of a multinational crew

The degree of satisfaction of shipping companies/agencies with their foreign-born crew members was questioned. On a scale of 1 to 5, where 1 indicated strong dissatisfaction and 5 indicated strong satisfaction, more than half of the respondents indicated satisfaction (48.27% in total, with 20.69% indicating strong satisfaction and 27.59% indicating satisfaction). This was around seven times higher than the rate of dissatisfaction (6.9% overall; 3.45% strongly dissatisfied and 3.45% dissatisfied). Although the normal level of satisfaction (44.83%) was taken into consideration, the percentage of shipping companies and agencies who showed a favorable attitude toward employing multinational officers is still considered to be high. The full results are shown in Table 5 and Figure 10.

Table 5. Level of satisfaction with the employment of a multinational crew

Strongly dissatisfied	Dissatisfied	Normal	Satisfied	Strongly satisfied
3.45	3.45	44.83	27.59	20.69

Figure 10. Level of satisfaction with the employment of a multinational crew



Level of agreement to employ foreign seafarers

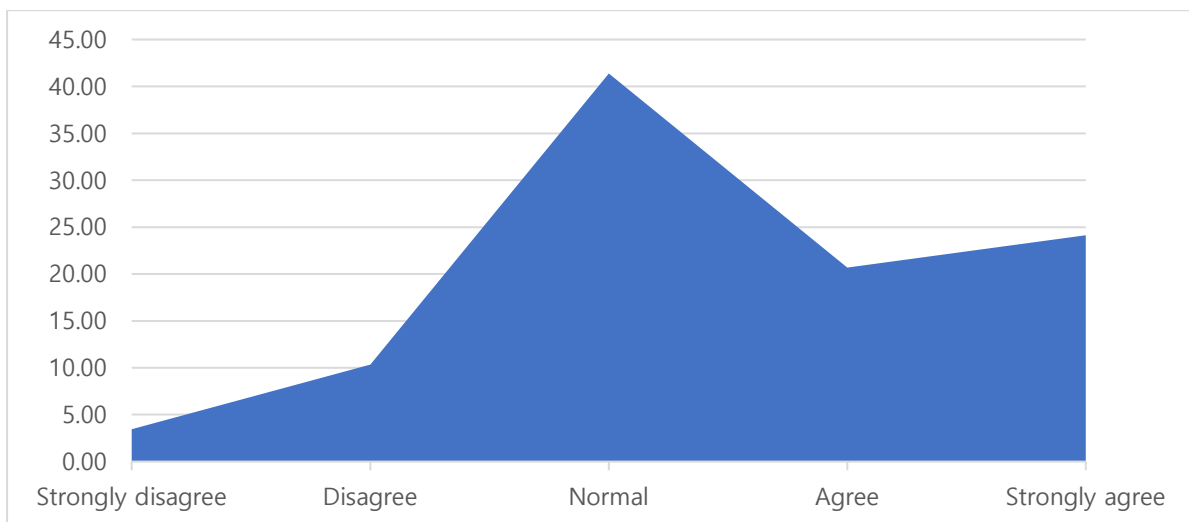
On a 5-point Likert scale, the respondents indicated a high level of agreement with the practice of employing foreign seafarers, with an average mean score of 4.62. To elaborate, more than

40 percent of the respondents (44.83% in total) expressed agreement, followed by neutrality (41.38%). Given the total reported disagreement rate of 13.79%, a significant percentage of shipping companies/agencies were amenable to the hiring of foreign seafarers from outside their region. A full breakdown of the results is shown in Table 6 and Figure 11.

Table 6. Level of agreement to employ foreign seafarers

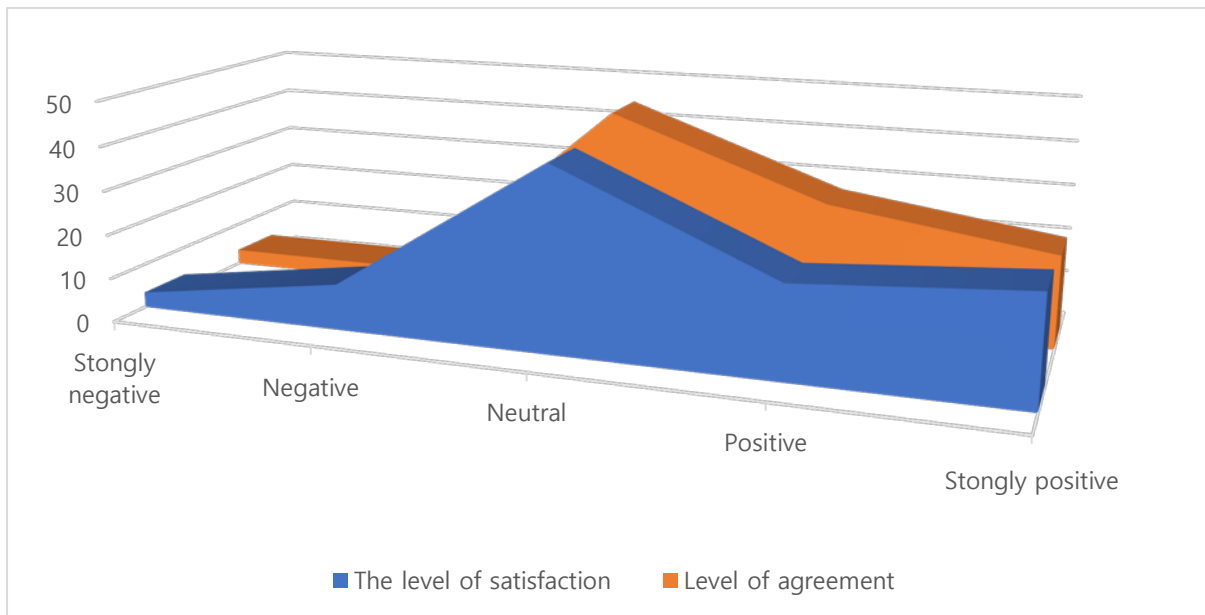
Strongly disagree	Disagree	Normal	Agree	Strongly agree
3.45	10.34	41.38	20.69	24.14

Figure 11. Level of agreement to employ foreign seafarers



From the data on *satisfaction and willingness to employ foreign seafarers* as shown in Figure 12, the shipping companies'/agencies' high levels of inclination toward a favorable response should be highlighted. In terms of neutrality, both graphs indicate a greater percentage of satisfaction and agreement with future employment, which are favorable indications of seafarers' cross-labor mobility, in marked contrast to the comparatively low levels of dissatisfaction and disagreement.

Figure 12. An industrial attitude toward cross-labor mobility



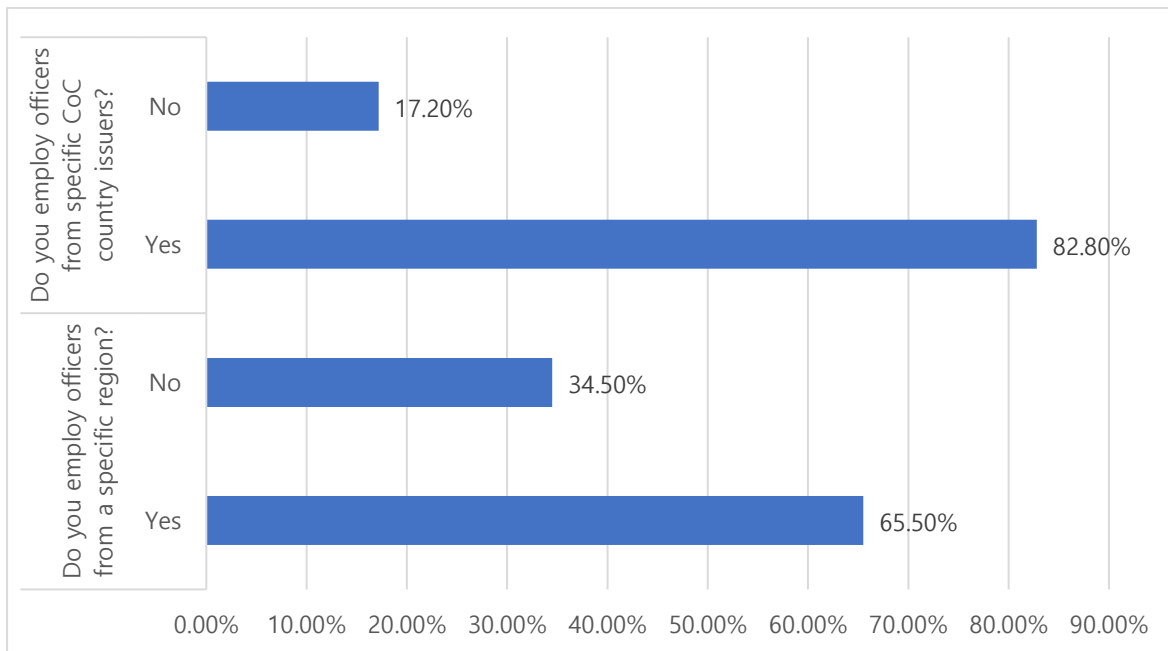
From this viewpoint, it is worth noting that the industrial perspective reflects a generally favorable attitude toward cross-labor mobility. This appears to be primarily because it enables employers to engage labor at a lower cost than domestic seafarers while also diversifying their workforce through the addition of new skills and knowledge from different regions.

However, it also seems necessary to dig deeper into the reasons why such shipping companies or agencies are hesitant to hire foreign seafarers or to announce future neutral intentions. An increased understanding of the underlying causes of these negative reactions, even if they account for only a small proportion of the total, will likely contribute to an improvement of the relevant policy and regulations, as well as the establishment of an efficient support system for enhancing cross-labor mobility.

Preference on a specific geographic region or CoC-issuing economy

In response to the question of whether seafarers were chosen from a particular geographic area or CoC-issuing economy, some intriguing findings were discovered, as shown in Figure 13.

Figure 13. Preference for specific geographic region or CoC-issuing economy



Whereas 65.5 percent of the respondents answered “yes” to the question of whether they employ seafarers from a specific geographic region, 82.8 percent answered “yes” when asked if they hire individuals who had obtained their license from a specific CoC issuer. This implies that, when it comes to employment, whether a particular seafarer is employed or not depends on the economy that issued their CoC or whether mutual recognition exists; this effectively serves as a regulatory framework, regardless of the individual’s capabilities or qualifications. This poses a barrier not just for shipping companies wishing to hire seafarers of a high qualification but also for seafarers themselves aiming to expand their careers into international shipping. In this regard, it is crucial to find a solution to the issue of the mutual recognition of CoCs through joint efforts at the APEC level, based on the common goal of ensuring the provision of high-quality education and training by establishing a mutually agreeable training standard.

In contrast, for seafarers in a specific geographical region, a relatively lower proportion of respondents indicated agreement (65.50 percent compared to 82.80 percent, 20.3 percent differences). Of course, the CoC issuing economy can be identical to this specific geographical region, but taking into account its broader meaning based on geographical characteristics (e.g., competitiveness of the average salary, English language proficiency, and tolerance for cultural diversity), this could also be interpreted slightly differently.

Based on this perspective, in order to lower the barriers to cross-labor mobility, the mutual recognition of CoCs across the APEC region should be sought within a policy framework, while the cultivation of soft-skill capacities of seafarers should also be considered.

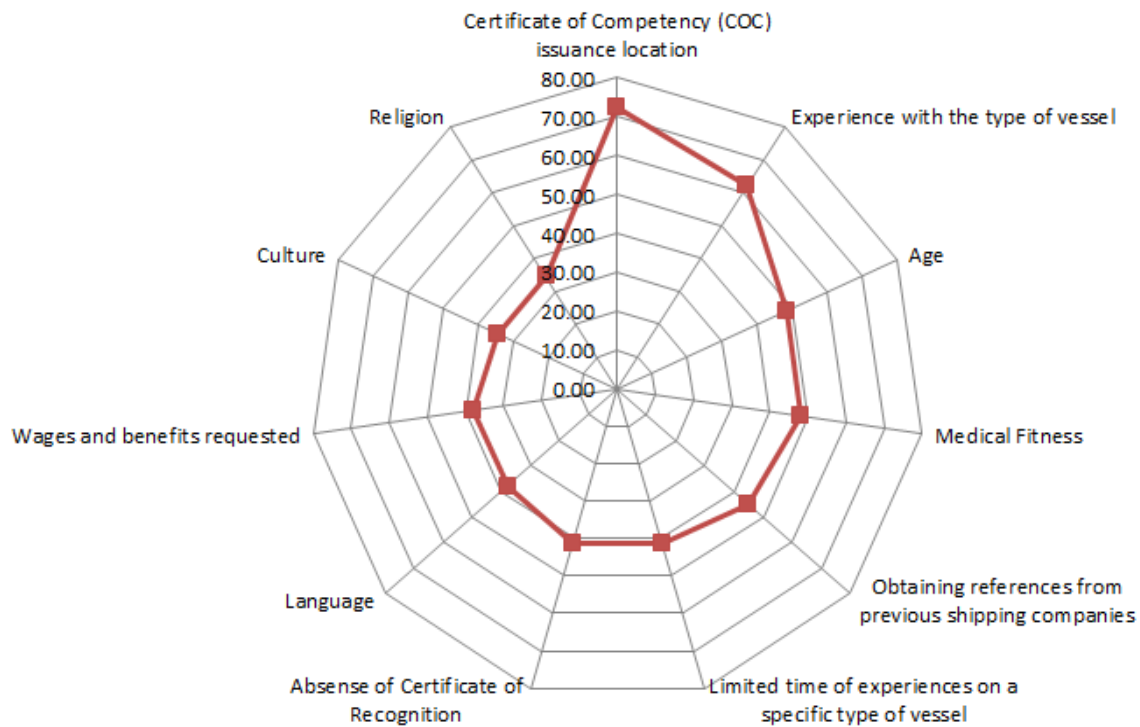
Barriers to employing foreign crew members

The expected causes of this were uncovered as a means of examining *the restrictions facing the shipping industry/crewing agencies when attempting to recruit foreign crew members from beyond their regional boundary*. The 11 parameters were carefully selected following a review of the literature and a pilot survey and included nationality, experience with the type of vessel, and mutual recognition of CoC. Additionally, soft skills such as language proficiency, cultural awareness, and religious tolerance were taken into account, in a manner similar to that of seafarers. The multiple-choice format of the question permitted the selection of more than one response for each factor. The results detailed in Table 7 and Figure 14 illuminate the specific obstacles that shipping companies/agencies face in this regard.

Table 7. Barriers to employing foreign crew members

	Items	Percentage
1	CoC issuance location	72.41
2	Experience with the type of vessel	62.07
3	Age	48.28
4	Medical fitness	48.28
5	Obtaining references from previous shipping companies	44.83
6	Limited time of experience on a specific type of vessel	41.38
7	Absence of mutual recognition of CoC	41.38
8	Language	37.93
9	Wages and benefits requested	37.93
10	Culture	34.48
11	Religion	34.48

Figure 14. Barriers to employing foreign crew members



To begin, two of the most significant factors affecting cross-labor mobility included the CoC issuance location (72.41%) and the absence of mutual recognition of CoC (41.38%). The important element to note here is that more than two-thirds of the respondents stated that the location of CoC issuance was the most significant barrier to employing foreign seafarers in this context. Given that the seafarers employed in this type of international working environment typically obtain their CoCs, or licenses, in their home economies, the lack of recognition of each economy’s domestic training program and certification is judged to result in a misalignment between supply and demand in the domestic and international maritime labor markets. Given that a CoC cannot be recognized unless and until economies agree, the qualifications that seafarers earn in their home economies cannot be used to apply for positions with shipping companies registered in other regions; therefore, the issues surrounding CoC recognition must be addressed at the economic level.

A further aspect to consider is experience with a specific type of vessel, which was found in second and sixth positions, with scores of 62.07 percent and 41.38 percent for “experience with the type of vessel” and “limited time of experiences on a specific type of vessel,” respectively.

As stated previously, given that the operational systems of ships are highly dependent on the types of cargo being transported, those wishing to join type-specific vessels (e.g., cruise ships, tankers, chemical ships, icebreakers) must meet a series of additional education and training requirements that are not covered by their general CoC. Therefore, even if their CoC is mutually recognized, the need for months of prior experience on particular types of vessels with additional certificates may pose a restriction on the movement of seafarers across borders. That is, both onboard training as an apprentice officer and the acquisition of required onboard experience (e.g., in the case of a specific type of vessel such as a tanker) at the officer level are required to join the international shipping industry. However, it can be quite a challenge to gain the appropriate onboard experience, which in turn affects the recruitment of qualified seafarers when shipping markets require them.

Last but not least, soft skills such as language, culture, and religion that are necessary for multinational working environments are shown to be important. As pointed out in the literature review, cultural differences affecting communication, working behaviors, and safety onboard can be a barrier for shipping companies that are considering hiring seafarers from different parts of the world. In an onboard working environment, strong social and professional ties among crew members are essential, as a team's failure to perform correctly may result in serious danger. In this perspective, from cadet training to working professionals onboard, a broad support system for soft skills such as language proficiency, cultural awareness, and religious tolerance must be provided. In other words, although seafarers with a university degree from an accredited institution are fully equipped with the hard skills required by international convention, they frequently encounter barriers when attempting to enter the international shipping industry without an adequate level of soft skills. Given that English is recognized as the working language of international shipping, multilingual and cultural competence onboard is once again seen as of the utmost significance.

Attraction to motivate seafarers to apply to shipping companies

On the basis of the questions posed during the pre-interviews and pilot surveys, 20 essential parameters for attracting seafarers in international shipping markets were identified. This question was presented in a multiple-choice format, permitting the respondents to select various

answers for each category. The responses to the questions provide insight into the various forms of policy employed in the recruitment of seafarers, as shown in Table 8.

Table 8. Attraction to motivate seafarers to apply to shipping companies

	Attractions	No. of respondents	Percentage
1	Competitive wages	24	82.76
2	Career progression	23	79.31
3	Internet access 24/7	21	72.41
4	Career development at sea	18	62.07
5	Paid leave	16	55.17
6	Sponsoring training courses	15	51.72
7	Offering permanent position	15	51.72
8	Good living conditions onboard	15	51.72
9	Health insurance	13	44.83
10	Better employment benefits	13	44.83
11	Short trip length	13	44.83
12	Larger crew	12	41.38
13	Gym or Swimming pool	12	41.38
14	Entertainment activities	11	37.93
15	Better financial employment benefits (pension)	9	31.03
16	Digital services	8	27.59
17	Family insurance	8	27.59
18	Offering more facilities onboard	5	17.24
19	Academic activities	4	13.79
20	Sharing different experiences	3	10.34

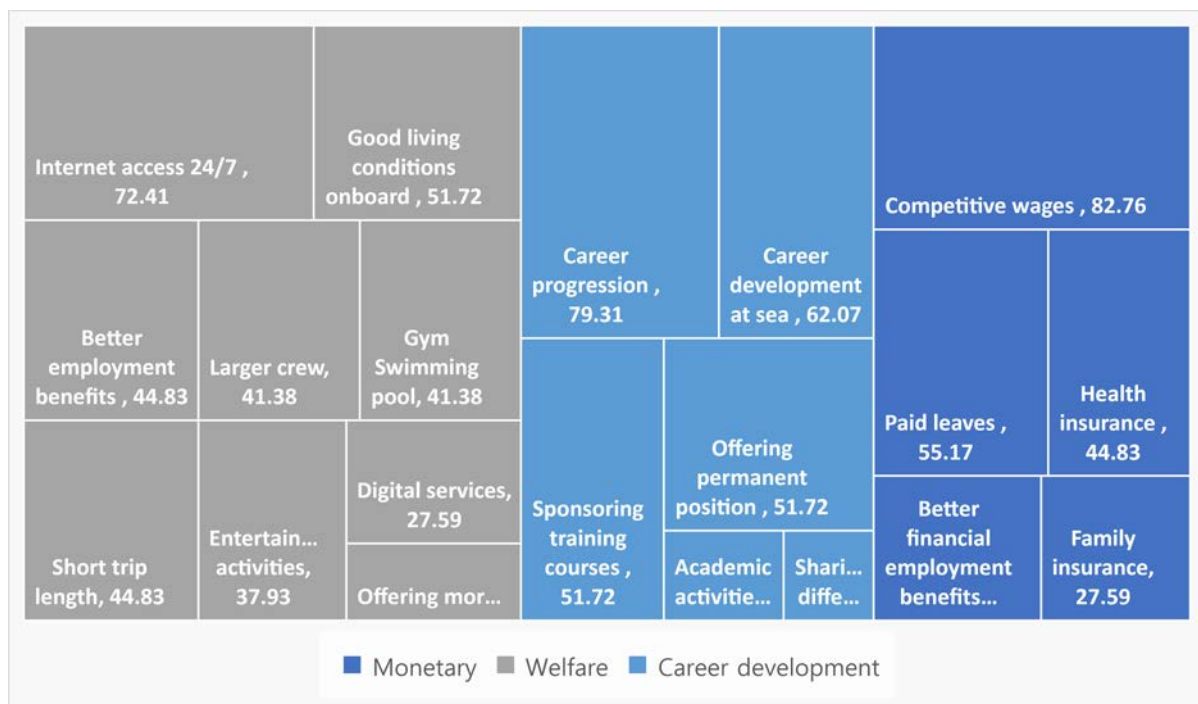
From the results shown in Table 8, the recruitment packages offered by each organization fall mostly into three categories: monetary compensation, career advancement, and welfare, as shown below:

- **Monetary compensation:** competitive wages (82.76%), paid leaves (55.17%), health insurance (44.83%), better financial employment benefits (pension) (31.03%), and family insurance (27.59%)
- **Career advancement:** career progression (79.31%), career development at sea (62.07%), sponsoring training courses (51.72%), offering a permanent position (51.72%), academic activities (13.79%), and sharing different experiences (10.34%)

- **Welfare:** internet access 24/7 (72.41%), good living conditions onboard (51.72%), better employment benefits (44.83%), short trip length (44.83%), larger crew (41.38%), gym, swimming pool (41.38%), entertainment activities (37.93%), digital services (27.59%), and offering more facilities onboard (17.24%)

Figure 15 provides a visual representation of each element divided into three categories with the respective percentage scores.

Figure 15. Recruitment packages offered in terms of monetary compensation, career advancement, and welfare



In the categorizations above, the elements of welfare can also be viewed as economic assistance to seafarers (e.g., internet access and better employment benefits) from the company’s perspective. In this research, direct monetary assistance is categorized as monetary compensation, whereas indirect monetary assistance is classified as welfare. In each category, the top-ranked elements reflect the priorities of seafarers when selecting a shipping company: *competitive wages* (82.76%) as the most important monetary compensation, *career progression* (79.31%) as part of career development, and *internet access 24/7* (72.41%) as a crucial element of welfare packages.

A specific thing to note here is the seemingly rapidly growing demand for increased onboard–onshore connectivity, which reflects the current digital trend among the younger seafaring

generation. This seems to have become particularly accentuated as a result of the global pandemic, during which onshore access was severely limited due to travel and crew change restrictions, potentially isolating seafarers and contributing to physical and mental health issues.

Another factor to note here is that more than half of the shipping companies that responded (51.72%) were *offering permanent positions* in a bid to maintain a well-qualified seafaring workforce. As previously discussed in the literature review, the flexible aspects of employment practices in shipping, such as temporary contracts, are directly related to the unpredictability of job security and continuity, resulting in an unstable supply of seafarers and high employee turnover in the international shipping industry. Given that such job insecurity issues must be addressed in the context of sustainable shipping through the provision of skilled human resources, efforts to provide the option of a permanent position appear to be highly desirable. In addition, given that the uncertain job continuity of seafarers is one of the root causes of declining job satisfaction, which may also negatively impact seafarer retention and the recruitment of new personnel, the industry’s attempt to attract seafarers in this way can be viewed as quite positive and should be encouraged.

The capability of seafarers that shipping companies aim to foster

On the basis of a review of the relevant literature and pilot surveys, seven major areas were identified that shipping companies aim to cultivate in their seafarers. This question was presented in a multiple-choice format, allowing the respondents to choose from a variety of responses for each category, as shown in Table 9. The results provide a good indication of the future direction of seafarers’ education and training and the industry’s current competency requirements.

Table 9. The capability of seafarers that shipping companies aim to foster

	The areas of capacity building required for seafarers	No. of respondents	Percentage
1	Management and leadership skills	26	89.66
2	Problem-solving skills	22	75.86
3	Technical skills	22	75.86

4	Effective communication and social skills	19	65.52
5	Motivation skills to learn continuously	16	55.17
6	Time management skills	15	51.72
7	Digital literacy skills	11	37.93

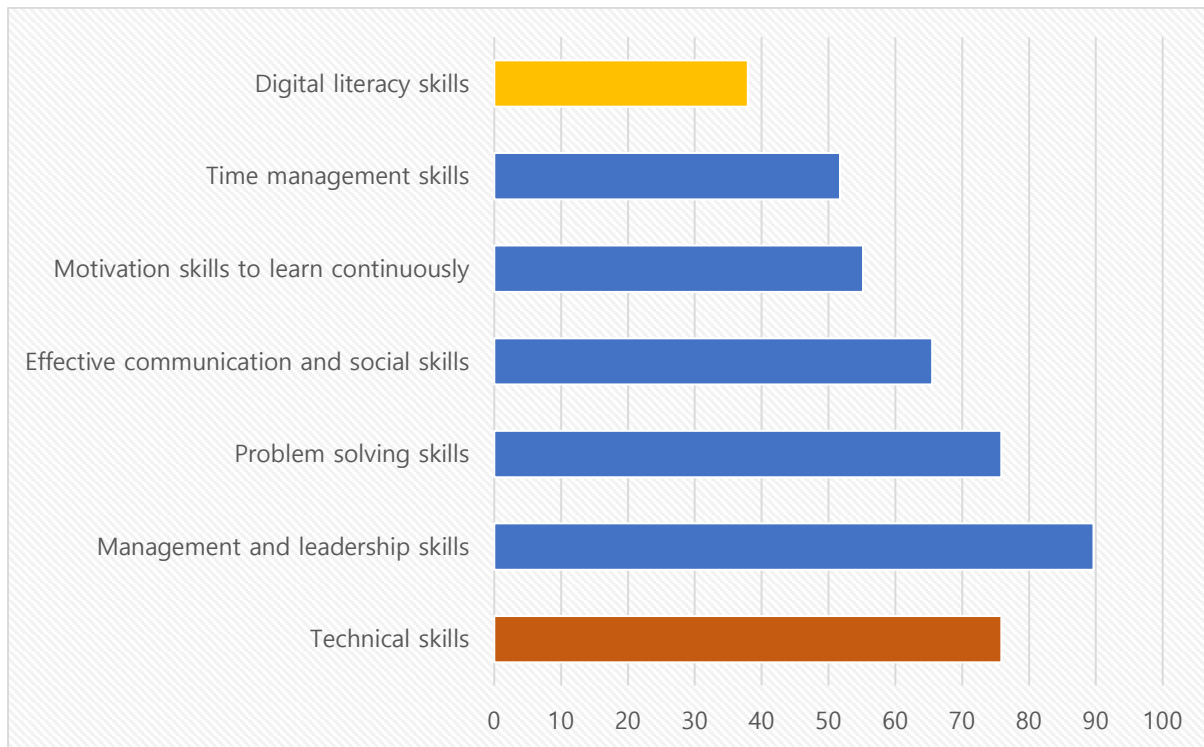
As illustrated in Table 9, there are three primary areas where capacity building is required:

- **Hard skills based on CoCs:** Technical skills (75.86%)
- **Soft skills:** Management and leadership skills (89.66%), problem-solving skills (75.86%), effective communication and social skills (65.52%), motivation skills to learn continuously (55.7%), and time management skills (51.72%)
- **Future digital skills:** digital literacy skills (37.93%)

When considering that this question concerns the development of supplementary competencies for seafarers who are already working in the global shipping markets, a greater emphasis was placed on soft as opposed to hard skills. By this point, seafarers have already proven their hard skills by gaining the industry qualifications required at the point of entry. Reflecting the ongoing digitalization of the maritime sector, digital literacy could also be considered a hard skill; presently, however, the ability to handle the current navigation machinery and equipment was deemed to be closer to the hard skills required by the CoC as categorized. Furthermore, problem-solving skills are classified as soft skills when defined as the ability to handle unexpected problems that arise in a variety of living and professional situations rather than problem-solving based on technical knowledge.

Figure 16 illustrates the relative significance of the areas of essential capacity building for seafarers (for enhanced readability, *hard skills* are colored red, *soft skills* are colored blue, and *digital skills* are colored yellow).

Figure 16. The capability of seafarers that shipping companies aim to foster in terms of hard skills, soft skills, and digital skills.



The results show that the soft skills necessary for working with multilingual, multicultural, and multigenerational crew members onboard received more consideration (e.g., management and leadership skills and effective communication and social skills). In an increasingly globalized seafaring environment, the vast array of soft skills may represent unseen barriers for seafarers attempting to enter the global shipping business. Thus, a seafarer’s set of soft skills may be a determining element in both their onboard and shore-based career progression. As previously stated, given that these “soft skills” cannot be acquired quickly but instead require a significant amount of time to reach a satisfactory level, a systematic training system spanning the period from cadet to officer must be developed to prevent them from acting as unforeseen barriers to entry into the international shipping industry and to further career advancement in the maritime industry.

Although digital literacy ranks lowest among the seafarer competencies currently required by shipowners, the significance of this skill cannot be understated, given that digital literacy is a relatively new concept that has emerged alongside the rapid technological advancements in the maritime industry. Furthermore, with these technological advancements expected to continue, new workforces will need to be hired that are capable of utilizing the newly introduced technologies. Furthermore, the shipping industry’s expanding digitalization and automation

will demand newer and more technically sophisticated knowledge and experience than is currently accessible.

Preferred means of capacity building for seafarers

In the question that asked about the preferred means of capacity building for seafarers, preferences in two major categories, namely digital and person-to-person, were inquired about based on two sub-categories each to determine the desired direction of MET services provision in the future.

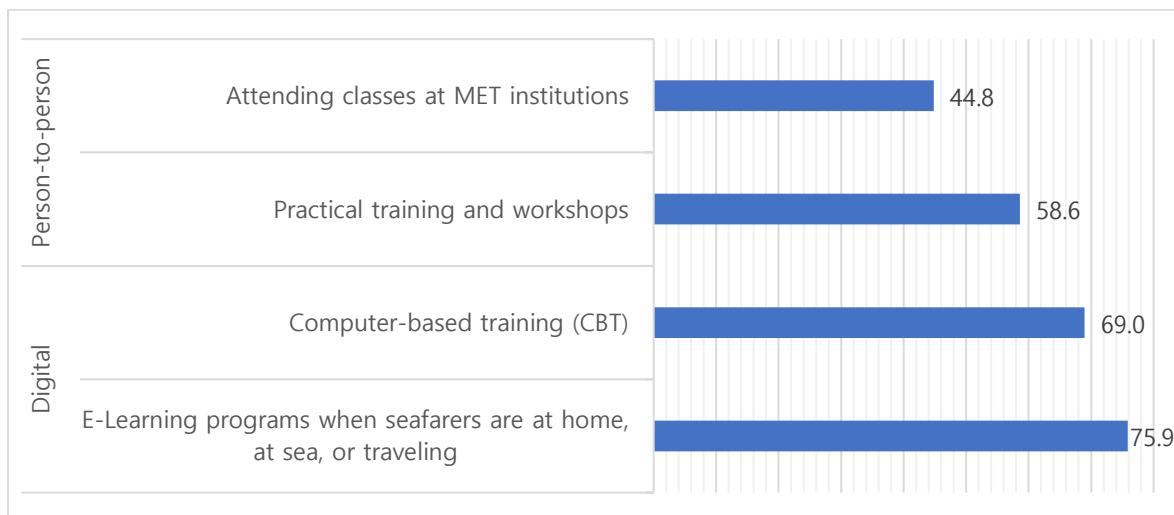
- **Digital:** E-learning programs when seafarers are at home, at sea, or traveling; Computer-Based Training (CBT)
- **Person-to-Person:** Practical training and workshops; attending classes at MET institutions

As indicated in Table 10, the question was provided in a multiple-choice format, allowing the respondents to select from several possible replies for each category.

Table 10. Preferred means of capacity building for seafarers suggested by shipowner

	The preferred means of capacity building	No. of respondents	Percentage
1	E-Learning programs when seafarers are at home, at sea, or traveling	22	75.9
2	Computer-Based Training (CBT)	20	69.0
3	Practical training and workshops	17	58.6
4	Attending classes at MET institutions	13	44.8

Figure 17. Preferred means of capacity building between digital and person-to-person



On the basis of the statistics as illustrated in Figure 17, it would appear that preferences for digital education and training remain significantly more widespread. Against the backdrop of the COVID-19 pandemic, in which face-to-face education for seafarers was severely restricted, the increased demand in the shipping sector to provide seafarers with high-quality job training has been a significant factor. As acknowledged by the industry, the future face-to-face delivery of MET should be supplemented by the creation of online training programs covering both hard technical skills and soft skills. To accomplish this, it is necessary to account for the vastly inferior internet access onboard compared to on shore. This can be addressed by co-developing and delivering computer-based digital training that does not require internet access. In other words, it may be essential to address the development and deployment of an online system for lifelong learning that can be utilized onboard via CBT or at home on shore via the internet.

This would require close collaboration among APEC member economies, recognizing that the expertise of each member economy is diverse and therefore quality education and training would be disseminated in a mutually dependent way.

In addition, due to the inherent characteristics of seafarers' job training that includes obligatory familiarization with operating equipment or machinery in practice, consideration should also be given to how to practically visualize and implement training that includes hands-on experiences in the digital learning environment. Emerging technologies such as the metaverse, virtual reality, and augmented reality could be considered when seeking to address this issue. In addition, a blended learning system should be implemented, whereby seafarers' capabilities can be expanded and enhanced with greater flexibility in time and place through the integration of online and offline learning. For this, it would be mutually beneficial for MET institutions throughout the APEC region to utilize existing training properties and provide co-developed, quality-assured training programs both online and offline.

3.2.2.3. Summary of the Industrial Perspective

- The international shipping industry employs foreign officers from diverse locations to promote workplace diversity, bring new skills, and inspire creativity onboard vessels, as well as achieve the operational cost efficiency that results from their lower wage rates compared to local officers.
- The level of satisfaction with and willingness to employ a multinational crew is notably positive, indicating a generally positive attitude toward seafarers' cross-labor mobility.
- Shipping companies have preferences regarding specific geographic regions or CoC-issuing economies in general, although the preference for a specific CoC-issuing economy is higher than the preference for seafarers from a specific geographic region. In terms of seafarers' cross-labor mobility, the question of whether seafarers have CoCs issued by the economy through mutual recognition is the first hurdle to overcome. In this regard, the mutual recognition of CoCs across APEC areas should be sought within a policy framework as a means of reducing barriers to cross-labor mobility.

- The ability to hire qualified seafarers with prior experience on specific types of vessels and additional credentials is generally restricted due to the challenges that seafarers encounter in securing work opportunities requiring the relevant qualifications.
- A lack of soft skills such as leadership, language fluency, cultural awareness, and religious tolerance, which are essential in global professional environments, is another factor of the highest concern that shipping businesses must consider. In addition to the STCW-based hard skills, the direction of future MET must be adjusted to emphasize the development of these soft skills.
- The primary factors that encourage seafarers to apply to shipping companies are monetary compensation, professional progression opportunities, and welfare. The industry's efforts to attract seafarers in this regard can be viewed as quite necessary and should be encouraged, with a particular emphasis on, for example, increased internet connectivity to ensure social interactions online and offering permanent positions to ensure job security, which are viewed as factors that increase seafarer retention.
- The capabilities of seafarers that shipping companies seek to foster can be categorized into three basic groups: hard skills based on CoCs, soft skills, and future digital skills. The relative value of soft skills, which can be perceived as unseen obstacles while interacting with multilingual, multicultural, and intergenerational crew members, was highlighted.
- In terms of the preferred methods of capacity building for seafarers, the shipping companies expressed slightly higher preferences for digital education and training over person-to-person interactions. Given the nature of shipboard operations, a blended learning system capable of running online and offline learning, as well as supporting learning materials, needs to be developed through a partnership of each member economy's expertise.

3.2.3. Economic Barriers

3.2.3.1. Demographic Characteristics of Respondents

An investigation into the economic hurdles posed by APEC member economies was conducted using a questionnaire survey. A total of 10 out of 21 economies answered. Given that the overall number of APEC economies does not constitute an appropriate statistical population and that the response rate was 47.61 percent, it appears impossible to assert the statistical validity in its entirety. However, it is anticipated that the information gleaned from the economic officers responsible for domestic seafarer policy issues and their perspectives on cross-labor mobility will provide an overall assessment of the situation regarding these matters. The respondents' demographic characteristics are given as follows:

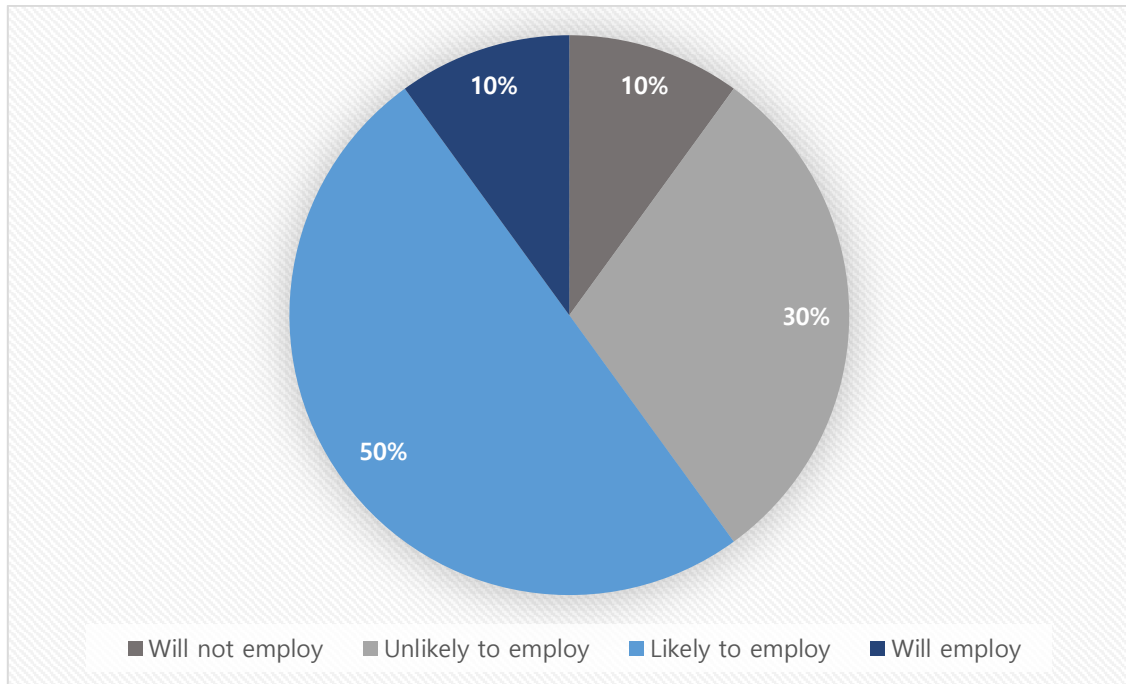
- **Numbers:** 10 out of 21 APEC member economies
- **Economies that participated:** Australia; Brunei Darussalam; Chile; Chinese Taipei; Indonesia; Republic of Korea; Mexico; Peru; The Philippines; and Thailand
- **Classification of economies based on seafaring manpower**
 - Demander of ranked seafarers: 4 (40%)
 - Supplier of ranked seafarers: 5 (50%)
 - Supplier of ratings: 1 (10%)

3.2.3.2. Analysis of Economic Barrier

Willingness and agreement to employ foreign seafarers

As a starting point, *the likelihood of flag state vessels from each economy employing seafarers from other economies* was questioned. On a scale of 1 to 4, where 1 indicated “will not employ” and 4 indicated “will employ,” more than half of those surveyed expressed a positive outlook (60% in total, with 10% indicating “will employ” and 50% indicating “likely to employ”). In contrast, there were several negative responses (40% in total, with 10% stating “will not employ” and 30 percent indicating “unlikely to employ”), as illustrated in Figure 18.

Figure 18. Willingness to employ foreign seafarers



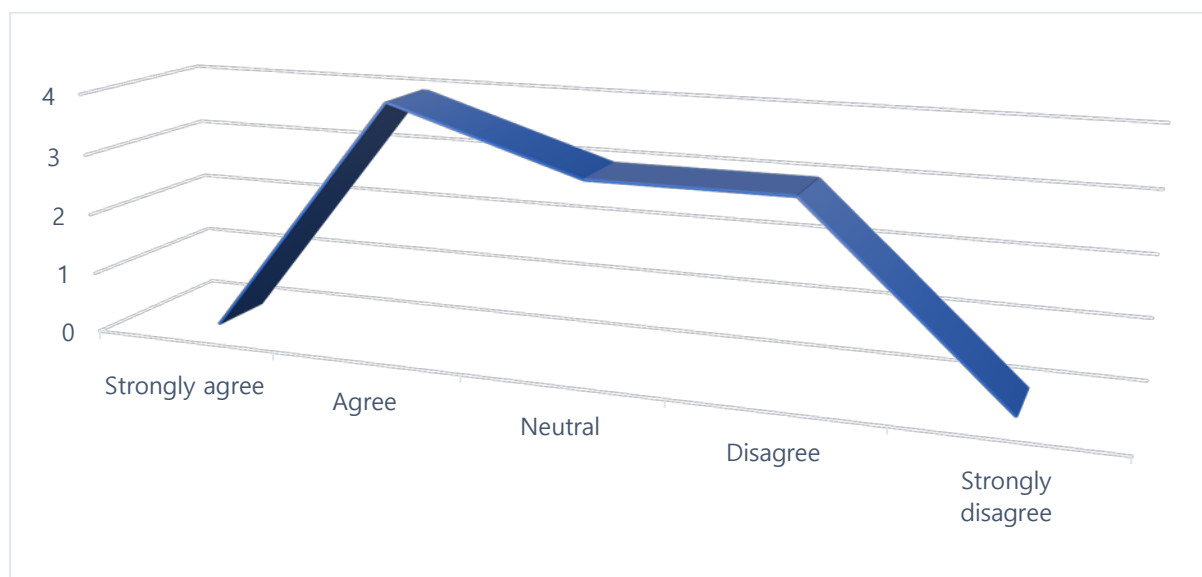
Due to the small number of responses, it was not possible to adequately infer the appropriate findings from the questionnaire alone; therefore, an open-ended question was included to provide deeper insights. The economic officers that responded with a resounding “no” to this issue noted that an influx of seafarers from other economies was unnecessary at this time, based on the existing seafaring workforce in their region. In contrast, others reacted to this issue with a strong “yes,” even highlighting the need for IMO to promote policies that enhance cross-border labor mobility.

As such, the officers’ willingness to accept an influx of overseas seafarers into their home economies may vary depending on the specific economic or labor market conditions. From this perspective and based on these findings, it may prove quite challenging to gain an understanding of the long-term strategies and objectives pursued by each member economy. However, given that more than half of the economies have shown a willingness to employ foreign seafarers in their region, additional research on facilitating the cross-APEC labor mobility of seafarers, with a specific focus on the economic level, appears to be warranted.

This tendency is also well reflected in the question of *whether or not they are willing to employ foreign seafarers*. When asked about their level of agreement with the statement “How strongly do you agree with employing foreign seafarers?”, with responses possible on a scale from 1

(strongly disagree) to 5 (strongly agree), less than half of the respondents expressed positive agreement (40% indicating “agree”), while 40 percent were neutral, as shown in Figure 19.

Figure 19. Agreement to employ foreign seafarers



The reasons for agreement can be inferred from the statements of the open-ended questions. According to one response, although the employment of foreign seafarers is not currently a pressing issue, this is likely to change in the future as fewer domestic seafarers are trained. Another economic officer noted that a measure to ease visa restrictions aimed at facilitating the employment of foreign seafarers is currently underway. An officer from another economy, meanwhile, reacted negatively, expressing “disagreement” and stating that the implementation of the so-called cabotage principle to protect its domestic maritime resource did not permit the employment of foreign seafarers in their region, and therefore could be a factor impeding cross-border labor mobility. Cabotage, in this context, refers to a system of safeguarding a domestic marine sector for its own citizens to ensure the stable operation of competent maritime professionals and decent job opportunities.¹⁴⁸ For example, the transportation of goods and persons between ports in the United States is usually confined to vessels that are flagged, crewed, built, and owned in the United States. This type of rule also applies in many APEC member economies diversely, including Australia; Canada; Chile; China; Japan; Republic of

¹⁴⁸ ITF, “Why maritime cabotage matters”, accessed 10 June 2022, <https://www.itfglobal.org/en/sector/seafarers/cabotage>

Korea; and Russia.¹⁴⁹ However, the focus of this research is on the barriers to the movement of seafarers across international borders, rather than on the possible restrictions associated with cabotage. In the next part, the economic obstacles leading to unwillingness or disagreement regarding the employment of foreign seafarers will be examined in further detail.

Economic barriers affecting labor mobility

Using a 5-point Likert scale where the possible responses ranged from 1 (strongly disagree) to 5 (strongly agree) across 19 previously defined elements (e.g., reliance on local seafaring manpower, language barriers, economies that have ratified the MLC, and preferences for specific CoC issuers) in a pilot survey and literature review, *the barriers affecting labor mobility that discourage economies from employing seafarers of other nationalities* were identified as shown in Table 11.

Table 11. Economic barriers affecting labor mobility

	Economic barriers	Mean
1	Reliance on local seafaring manpower	4
2	Policies and regulations	4
3	Commitments to domestic seafarers	3.9
4	Language barriers	3.8
5	Economies that have ratified the MLC	3.7
6	Preferences for specific CoC issuers	3.5
7	Total crew cost	3.5
8	Security issues	3.4
9	Laws influenced international standards	3.4
10	Ability to align legislation with the latest maritime organization updates	3.3
11	Granting visa-free travel restrictions	3.3
12	Crewing companies or third-party ship management companies	3.3
13	Visa restrictions	3.3
14	Union interference	3.3
15	Restrictions and conditions imposed by seafarer supply economies	3.3

¹⁴⁹ American Maritime Partnership, "Cabotage Laws of the World", 25 September 2018, https://3snn221qaymolkgbj4a0vpey-wpengine.netdna-ssl.com/wp-content/uploads/2018/09/World-Cabotage-Study_Overview_Final.pdf

16	Citizenship necessities	3.1
17	Competition from foreign shipping companies	3.1
18	Flag state responsibilities	3.1
19	Lack of adequate training	2.5

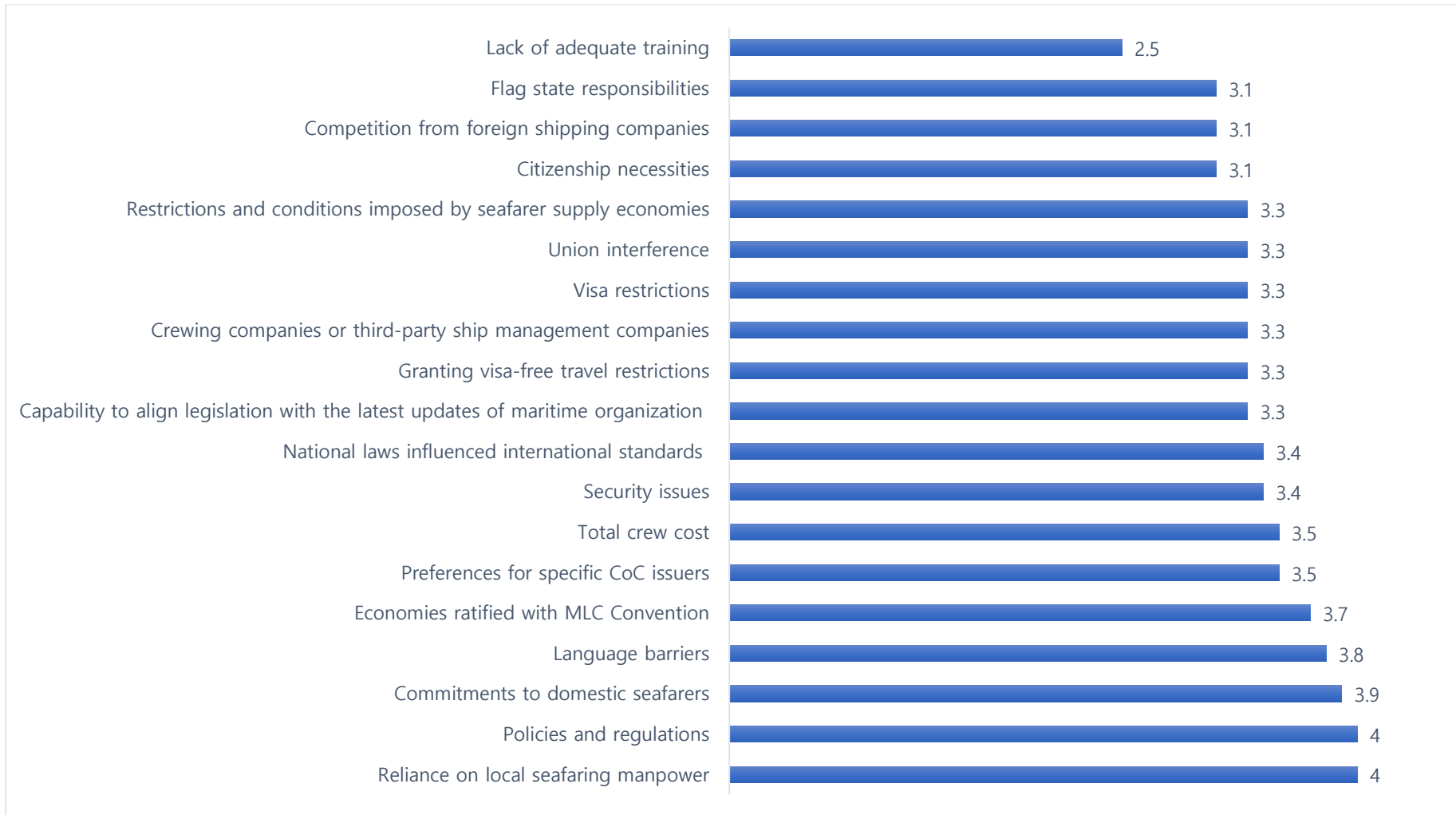
As displayed in Table 11, a total of 19 economic barriers were identified, with an average mean value of 3.41. Focusing on the barriers with scores above the average, the major concerns of economies may be characterized as follows: supply and demand balance in the domestic seafaring workforce (i.e., reliance on local seafaring manpower, M=4), protection of domestic seafarers (i.e., commitments to domestic seafarers, M=3.9), and differences arising from foreign seafarers in terms of language, welfare, and regulations (i.e., language barriers, M=3.8; economies that have ratified the MLC, M=3.7; preferences for specific CoC issuers, M=3.5). Last but not least, policies and legislation encouraging the employment of foreign seafarers in the domestic maritime industry were also regarded as one of the most significant barriers, with a mean score of 4.

From the results, it can be determined that the economies' policy on the creation of a friendly environment for the engagement of foreign seafarers is a key priority. This is based on how the top-ranked barriers (i.e., *Reliance on local seafaring manpower*; *Policies and regulations*) concern policy issues and thus rank higher than cost efficiency (*No. 7, Total crew cost*). Specifically, the results for *No. 5 Economies that have ratified the MLC* and *No. 6 Preferences for specific CoC issuers* demonstrate that cross-border cooperation on seafarer labor mobility at the level of the economy can be organized first to facilitate the cross-border employment activities of individual seafarers in the international shipping market. When compared to the perspectives of seafarers discussed in the previous section, policies and regulations should consider a broader range of organizational, regulatory, infrastructural, and personal contexts. Therefore, the concerns around rules and regulations should be closely managed by accommodating the perspectives of seafarers, industries, and economies through the identification of common ground to be addressed by all stakeholders, in order to reduce the disparity in understanding of directions while focusing on each party's primary concerns.

Last but not least, language barriers exist not only among seafarers but also within the industry and at higher economic levels. Given that linguistic barriers can prevent seafarers from

communicating, which can have negative impacts ranging from restricting entry to the shipping business, and the safe operation of ships, to the mental well-being of seafarers through social interaction, a central challenge for all parties involved should be assisting seafarers to achieve a satisfactory level of proficiency in maritime English. The following graph (Figure 20) provides a clearer visual explanation of the barriers identified above.

Figure 20. Economic barriers affecting labor mobility



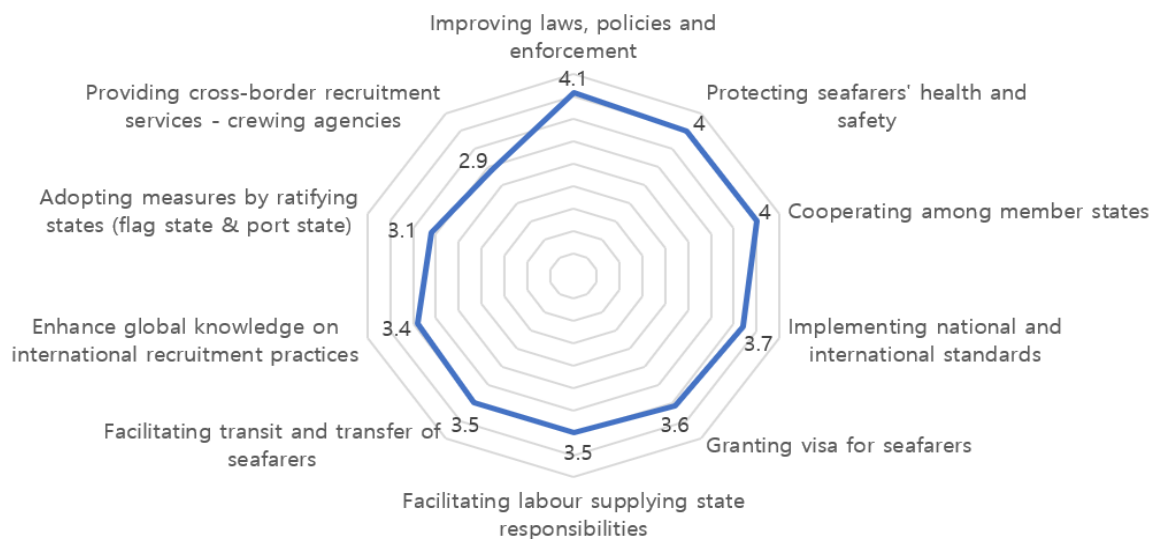
Strategies employed by economies to attract foreign seafaring manpower

In a pilot survey and literature review, 10 *tactics that economies utilize to facilitate the employment of additional foreign officers* were identified. These were presented to the respondents as questions using a 5-point Likert scale, with the possible responses ranging from 1 (strongly disagree) to 5 (strongly agree). The results are shown in Table 12.

Table 12. Strategies employed by economies to attract foreign seafaring manpower

	List of Strategies Employed	Mean
1	Improving laws, policies, and enforcement	4.1
2	Protecting seafarers' health and safety	4
3	Cooperating among member economies	4
4	Implementing domestic and international standards	3.7
5	Granting visas for seafarers	3.6
6	Facilitating labor-supplying state responsibilities	3.5
7	Facilitating the transit and transfer of seafarers	3.5
8	Enhance global knowledge of international recruitment practices	3.4
9	Adopting measures by ratifying states (flag state & port state)	3.1
10	Providing cross-border recruitment services – crewing agencies	2.9

Figure 21. Strategies employed by economies to attract foreign seafaring manpower



As evidenced by the results, member economies are attempting to address the challenges posed by economic barriers (e.g., policies and regulations, economies that have ratified the MLC, domestic laws influenced by international standards, and visa restrictions) as highlighted in Table 12 and Figure 21.

Among these prioritized actions taken by economies, the following are the most relevant to the identified barriers: improving laws, policies, and enforcement (M=4.1) to create a better environment for cross-border mobility; protecting seafarers' health and safety (M=4) to safeguard working conditions and welfare; cooperating among member states (M=4) such as for mutual CoC certification; and granting visas for seafarers (M=3.6) to promote physical mobility and protect workers' rights. As previously discussed, the establishment of an environment for foreign seafarers' entry and engagement in domestic shipping markets is one of the pre-determining factors for their cross-border labor mobility; accordingly, efforts to improve laws, policies, and enforcement, which is the top-ranking strategy, can be interpreted similarly. Given the global nature of the shipping industry, in which different domestic laws are applied based on the ship owner, the flag state of the vessel, or the nationality of the crew, coordinating seafarer-related laws, policies, and their enforcement in a mutually harmonized manner remains a challenge.

Given that for even a single item, each of the barriers and actions taken can be elaborated on in detail due to the inherent diversity and complexity of the items, APEC member economies need to be tasked with further investigating this through diverse forums, dialogue exchanges, knowledge sharing, and the dissemination of best practices to create coordinated actions regarding seafarers' cross-border labor mobility.

3.2.3.3. Summary of the Economic Perspective

- In terms of willingness and agreement to employ foreign seafarers, more than half of the respondents expressed a positive attitude. However, given the meaningful number of negative responses, it is necessary to further investigate the unique economic shipping situations of each member economy in-depth to enhance cross-border labor mobility.
- In terms of their willingness to hire foreign seafarers, less than half of the respondents agreed, while the same percentage expressed reservations. This appears to be related to the existing supply and demand balance for seafarers in the domestic maritime industry, as well as domestic regulations such as cabotage, which protects the domestic maritime industry for its own citizens.
- In terms of the barriers affecting labor mobility that discourage economies from employing seafarers of other nationalities, the following factors were revealed as the main concerns: supply–demand balance in the domestic seafaring workforce, policies and legislation, the protection of domestic seafarers, commitments to domestic seafarers, and language, welfare, and regulatory distinctions between foreign and domestic seafarers.
- Given that the majority of the top-ranking barriers are policy- as opposed to cost-related, it would appear that the creation of a friendly environment for the participation of foreign seafarers should be an economy’s priority. Specifically, economic cross-border cooperation for seafarers’ labor mobility, such as mutual recognition of CoCs and MLC implementation, must be a foremost priority.
- In this case, concerns around policies and regulations should be closely managed by accommodating the perspectives of seafarers, industries, and economies by establishing common ground among all stakeholders, given that seafarer policies and regulations encompass a greater variety of organizational, regulatory, infrastructural, and personal circumstances.

- Additionally, it is essential to highlight that language barriers exist at all levels within the seafarer, industry, and economic domains. As part of enhancing the soft skills of seafarers, all parties involved must view the provision of assistance for them to achieve a sufficient level of proficiency in maritime English as the most important task.
- In terms of the strategies used by economies to attract foreign seafaring manpower, member economies noted the following efforts: improving laws, policies, and enforcement to create a better environment for cross-border mobility; protecting seafarers' health and safety to safeguard working conditions and welfare; cooperating among member states such as for mutual CoC certification; and granting visas for seafarers to promote physical mobility and protect workers' rights.
- Due to the diversity and complexity of even a single barrier element, each should be examined in further detail through various forums, dialogue exchanges, knowledge sharing, and the dissemination of best practices to promote coordinated measures among APEC member economies regarding the cross-border labor mobility of seafarers.

SECTION 4: RESPONSE TO COVID-19

Globally, the COVID-19 pandemic has resulted in a devastating loss of human life and posed enormous challenges to public health, food systems, and the world of work. It has led to unprecedented economic and social devastation: billions of people have lost work; tens of millions have fallen into poverty; and millions of businesses have closed. Given that no pandemic of a comparable magnitude had occurred in recent history, there was a lack of clear direction at the outset. However, as more information about COVID-19 became available, each economy pursued its own response in a bid to mitigate the severe effects on global trade, supply chains, and logistics. Numerous international bodies, private sector organizations, and government agencies also demonstrated their commitment to resolving the issues posed by the pandemic by developing frameworks for information exchange, establishing new policy recommendations, harmonizing rules and regulations, and publishing statements and guidelines. However, the influence of COVID-19 has been quite significant in terms of its scale, and a variety of concerns remain unresolved and in deadlock in almost every industry, including the transportation sector.

This section will assess our current position in the global pandemic, how we arrived at this point, and what our next steps should be, with four parts as follows:

- **Part 1** addresses the impact of COVID-19 on the maritime sector, with a particular emphasis on the contemporary challenges confronting seafarers and the issues affecting global maritime trade and logistics;
- **Part 2** presents an overview of international guidelines and suggestions, with a particular emphasis on each issue highlighted by the organizations;
- **Part 3** discusses the two marine concerns, vaccination and the designation of seafarers as key workers, that have garnered the most attention over the last two years and are currently being evaluated as a “weak link” in the maritime industry;
- **Part 4** closes with recommendations based on widely acknowledged and practical recommendations from worldwide standards, guidelines, and publications.

4.1. COVID-19 Impacts on the Maritime Industry and Seafarer Labor Mobility

COVID-19 has led to a 3.5 percent fall in world GDP in 2020, which is the largest in 70 years. In line with this trend, maritime trade declined by 3.8 percent in 2020.¹⁵⁰ COVID-19, in particular, has had a substantial influence on seafarers' human rights by causing “the fragility of global supply chains as seafarers continue to endure tremendous, and yet largely invisible, hardship and suffering” with a “human rights blind spot”¹⁵¹ with a "human rights blind spot" in global shipping.¹⁵² Additionally, UNCTAD, in its “Review of Maritime Transport 2021,” noted how the pandemic has revealed and intensified existing issues in the maritime transport industry, including labor shortages and infrastructural requirements.

The most frequently reported challenges encountered by seafarers during the pandemic are as follows: travel restrictions and crew change bans, breach of contract, and access to medical services and vaccination.

Travel restrictions and crew change bans

On March 11, 2020, the WHO declared COVID-19 a global pandemic. Many governments around the world responded by imposing travel restrictions and closing their borders in an effort to minimize and prevent the future spread of COVID-19 within their respective territories. Since that time, travel bans, social isolation, vaccination, and the suspension of economic activity have all been part of the unprecedented set of containment measures against the virus. With the introduction of these policies across numerous economies, crew change bans, repatriation restrictions, and limited recruitment have created impediments to fair employment for seafarers, inevitably altering their global mobility patterns, as clearly pointed out by Michele Bachelet, High Commissioner for Human Rights.

¹⁵⁰ UNCTAD, “Review of Maritime Transport”, 2021

¹⁵¹ UN Global Compact, “UN tool aims to help seafarers facing fresh threats of being stranded by COVID-19”, accessed 10 June 2022, <https://www.unglobalcompact.org/take-action/ocean/you-cant-get-off>

¹⁵² ITF, “No more excuses for global brands as new tool launched in fight to resolve crew change crisis”, accessed 10 June 2022, <https://www.itfseafarers.org/en/news/no-more-excuses-global-brands-new-tool-launched-fight-resolve-crew-change-crisis>

The COVID-19 seafarer's crew change crisis has put the spot on one the weakest links in global supply chains.

Michele Bachelet, High Commissioner for Human Rights.

The severity of crew change challenges was further exposed by an IMO poll held on International Day of the Seafarer, June 25, 2021, with the topic of “Seafarers are critical workers.” When asked to name the most critical element affecting a seafarer in light of the impact of COVID-19, **guaranteed access to repatriation and crew change** received the highest response rate (41%). This result demonstrates how crew change developed into a significant issue for seafaring professionals in 2021. Additionally, as a negative result of travel restrictions, failure to enforce the MLC was rated fourth on 16 percent (N.B. MLC establishes guidelines for seafarers’ contracts and repatriation). It was therefore a huge challenge for shipping companies to comply with MLC under the COVID restrictions in terms of repatriating their seafarers. As a result, it became more difficult for ships to operate efficiently because of the travel restrictions and crew change bans, and this has negatively impacted the global supply chain. Given the strong relationship between travel restrictions and various other cross-border mobility issues, including visa issuance, self-quarantine regulation, and airline closures and openings, this must be the principal concern of international and domestic stakeholders across the maritime industry.

Breach of contract

At the height of the pandemic, it was reported that hundreds of thousands of seafarers were expected to require rapid repatriation after exceeding their original tours of duty (N.B. In certain cases, more than 17 consecutive months of service were reported). More critically, there is evidence that access to shore leave and medical treatment was severely restricted during this period.¹⁵³

¹⁵³ IMO, “Circular Letter No.4204/Add.23, Coronavirus (COVID-19) – Recommendations for port and coastal States on the prompt disembarkation of seafarers for medical care ashore during the COVID-19 pandemic”, 1 July 2020

According to the Neptune Declaration Crew Change Indicator, more than 400,000 crew members were trapped onboard ships during the peak of the pandemic¹⁵⁴, this contradicted MLC 2006, Regulation 2.4, Paragraph 2, which states that “Seafarers shall be granted shore leave to benefit their health and well-being and consistent with the operational requirements of their positions.”¹⁵⁵ In July 2021, the ICS estimated that roughly 250,000 seafarers would remain onboard after their contracts expired. This issue demonstrates the persistence of precarious labor circumstances at sea, which may jeopardize vessel safety by generating physical and mental fatigue among seafarers.¹⁵⁶

(COVID-19) has led to hundreds of thousands of seafarers being denied repatriation, crew changes, shore leave and ultimately being forced to stay working on ships long beyond their contracts.

IMO Secretary-General Mr. Kitack Lim

This problem is not limited to seafarers at sea but also affects those left on land and who want to return to work onboard. Crewing agencies’ recommendations to stay at home and await further announcements have placed seafarers in unexpected and financially precarious situations, as some may have been forced to wait indefinitely for new schedules and/or contract renewals.¹⁵⁷ Such uncontrollable deployment delays and contract violations have forced some to take an extended vacation, threatening the livelihoods of seafarers on temporary contracts and placing them in risky financial positions due to unsecured and delayed personal income¹⁵⁸.

Access to medical services and vaccination

The measures taken to deal with the COVID-19 pandemic have made it far more challenging for seafarers to disembark their ships, even when medical attention ashore is required and most

¹⁵⁴ Royal Museums Greenwich, “What is the Neptune Declaration?”, accessed 10 June 2022, <https://www.rmg.co.uk/stories/what-neptune-declaration>

¹⁵⁵ ILO, Maritime Labour Convention, 2006

¹⁵⁶ UNCTAD, Review of Maritime Transport, 2021

¹⁵⁷ IMO “Frequently asked questions about how COVID-19 is impacting seafarers”, accessed 10 June 2022, <https://www.imo.org/en/MediaCentre/HotTopics/Pages/FAQ-on-crew-changes-and-repatriation-of-seafarers.aspx>

¹⁵⁸ UNCTAD, Review of Maritime Transport, 2021

notably when patients have been diagnosed with or have a proven COVID-19 infection.¹⁵⁹ Despite mounting calls from international organizations for seafarers to be granted fair access to healthcare as a fundamental human right, mounting reports indicate that they have remained the most vulnerable group under the threat of COVID-19, with even emergency shore leave for medical care being denied.¹⁶⁰ According to MLC 2006 Regulation 4.1, all member states that have signed the Convention are required to offer immediate access to medical facilities for seafarers in urgent need of medical care.¹⁶¹ However, the COVID-19 measures and quarantine laws enforced by government bodies have impeded the prompt disembarkation of seafarers in need of immediate onshore medical treatment. While every ship has a medical officer who is responsible for managing onboard hygiene and medical care, they are unable to prescribe or request specific medications beyond those required to treat common illnesses and administer first aid. In this regard, access to medical services for seafarers, as well as the importance of maintaining close communication and establishing a platform for the exchange of information between the vessel, port, and coastal authorities, must receive greater emphasis than previously.¹⁶²

Vaccines, in conjunction with other interventions, are one of the critical elements in combating COVID-19, supporting the worldwide community in overcoming the significant limits imposed by the virus. According to Our World in Data Project, as of August 2021, more than 32 percent of the world's population had received at least one dose of vaccination¹⁶³¹⁶⁴; in contrast, however, only 15.3 percent of the world's seafarers had been vaccinated.¹⁶⁵ This points to seafarers being marginalized groups when it comes to vaccination in the event of an

¹⁵⁹ Eu Healthy Gateways, "Advice for cruise ship operators for preparedness and response to an outbreak of COVID-19", 2021

¹⁶⁰ ICS, "Coronavirus (COVID-19): Seafarer Shore Leave Principles", April 2022, <https://www.ics-shipping.org/publication/coronavirus-covid-19-seafarer-shore-leave-principles-second-edition/>

¹⁶¹ ILO, Maritime Labour Convention, 2006

¹⁶² UNECE, "Intermodal Transport in the Age of COVID-19; Practices, Initiatives and Responses, United Nations Economic Commission for Europe", 2021

¹⁶³ Our World in Data, "Total COVID-19 vaccine doses administered per 100 people", 2022, <https://ourworldindata.org/grapher/covid-vaccination-doses-per-capita?tab=map&time=latest>

¹⁶⁴ UK Parliament, "Covid-19 vaccinations: is the Global South falling behind?", 24 August 2021, accessed 10 June 2022, <https://lordslibrary.parliament.uk/covid-19-vaccinations-is-the-global-south-falling-behind/>

¹⁶⁵ Global Maritime Forum, "Low vaccination rate among seafarers, suggests Neptune Indicator", 12 August 2021, <https://www.globalmaritimeforum.org/press/low-vaccination-rate-among-seafarers-suggests-neptune-indicator>

epidemic or pandemic situation, despite their crucial role in maintaining the flow of global trade.

Despite the considerable efforts made to administer COVID-19 vaccines in large maritime economies in Europe, Asia, and North America,¹⁶⁶ it significant hurdles have been observed in terms of increasing the rate of immunization among seafarers, particularly those from emerging economies. For example, while the Philippines and Indonesia are two of the main exporters of seafarers to the global shipping industry, restricted access to vaccines and poor vaccination rates have been serious problems for seafarers from those economies.¹⁶⁷

To mitigate this situation, several voices have advocated placing seafarers at the top of the vaccine priority list as key workers to enable more effective and prompt control of the spread of the virus onboard ships. Through a joint statement, the leaders of five United Nations (UN) organisations (IMO, ILO, ICAO, WHO, and IOM) have added their voices to this conversation and increased the pressure on economies to take corresponding actions. In response to the request, many regional governments have launched vaccination programs in their ports to improve seafarers' access to vaccination¹⁶⁸, which could ultimately contribute to an increase in the vaccination rate of seafarers. However, despite these efforts, the majority of seafarers continue to rely on their home economies for vaccines. Evidently, this could suggest that seafarers' fair access to vaccination is inherently linked to the equitable global distribution of vaccines, notwithstanding the efforts of developed economies to provide seafarers with vaccination programs in ports.¹⁶⁹

4.2 International Guidelines and Suggestions

In response to the COVID-19 pandemic, seafarer-related international organizations have made publicly available various recommendations and informational materials representing a diverse

¹⁶⁶ IMO, "COVID-19 - Member States and Associate Members Communications", accessed 17 May 2022 <https://www.imo.org/en/MediaCentre/HotTopics/Pages/COVID-19-Member-States-Communications.aspx>

¹⁶⁷ The Maritime Executive, "Seafarers Have Low Vaccinations Rates as Crew Change Delays Persist", 12 Aug 2021, <https://www.maritime-executive.com/article/seafarers-have-low-vaccinations-rates-as-crew-change-delays-persist>

¹⁶⁸ IMO, "COVID-19 - Member States and Associate Members Communications", accessed 17 May 2022 <https://www.imo.org/en/MediaCentre/HotTopics/Pages/COVID-19-Member-States-Communications.aspx>

¹⁶⁹ Global Maritime Forum, T. Vemmelund, "Low vaccination rate among seafarers, suggests Neptune Indicator", accessed 17 May 2022, <https://www.globalmaritimeforum.org/press/low-vaccination-rate-among-seafarers-suggests-neptune-indicator>

range of insights and perspectives on the situation and reflecting the interests of their direct stakeholders. Based on their respective interpretations, the relevant bodies have highlighted various points and future activities with the aim of minimizing the negative effects of COVID-19 on seafarers, as well as on global trade, supply chains, and sustainable development. These are presented in the following order: IMO, ICS, UNCTAD, European Maritime Safety Agency (EMSA), and ILO.

4.2.1 International Maritime Organization (IMO)

The IMO is a specialized UN agency responsible for the safety and security of shipping and the prevention of marine pollution by ships.¹⁷⁰ Their work also includes issues pertaining to seafarers, such as education, training, certifications, and rights.¹⁷¹ To take an example, amid the global COVID-19 pandemic, the IMO established the Seafarer Crisis Action Team (SCAT) in collaboration with ILO, ITF, and ICS to address the needs of individual seafarers. SCAT worked around the clock to coordinate regional governments, NGOs, trade unions, and relevant associations to direct seafarers in need of assistance to the appropriate organization.¹⁷²

The IMO initiatives to support seafarers are highlighted in the latest *IMO Circular Letter on Coronavirus (COVID-19) – Designation of seafarers as key workers*, which was issued on February 10, 2022. In keeping with its title, the publication highlighted the importance of designating seafarers as key workers. On February 28, 2022, the IMO, ILO, UNCTAD, and WHO published a joint statement to promote seafarers as key workers. The statement called for continuing coordination to manage the crew change issue, protect seafarer health and safety, and avoid supply chain disruptions during the ongoing COVID-19 pandemic, all of which are urgent priorities. As a crucial first step in responding appropriately to the plight of maritime workers, governments, industry, and international organizations are strongly urged to increase the scope of their collaborative efforts to lessen the effects of the pandemic on crew changes and safe working conditions as follows: vaccination, repatriation, safe working environment, protection equipment, certification, and medical shore leave.

¹⁷⁰ IMO, "Introduction to IMO", accessed 17 May 2022, <https://www.imo.org/en/About/Pages/Default.aspx>

¹⁷¹ IMO, "Calling for a Fair Future for Seafarers", 2021, <https://www.imo.org/en/MediaCentre/Pages/WhatsNew-1591.aspx>

¹⁷² IMO, "Supporting seafarers on the frontline of COVID-19", <https://www.imo.org/en/MediaCentre/HotTopics/Pages/Support-for-seafarers-during-COVID-19.aspx>

As mentioned previously, the IMO's actions extend to all key maritime sector stakeholders, including shipowners, charterers, manning agencies, and other members of the maritime workforce, by providing strategic guidelines and directions based on an analysis of inputs gathered from all stakeholder levels, in collaboration with other UN bodies and ILO.¹⁷³

4.2.2 International Chamber of Shipping (ICS)

ICS is the global trade organization for shipowners and operators, representing more than 80 percent of the world's merchant fleet. It provides information, guidance, and recommendations on COVID-19 to benefit the broader maritime community, with the assistance of its network of over 40 member economies.¹⁷⁴ Their recent publication "Coronavirus (COVID-19) Guidance for Ship Operators for the Protection of Seafarers" outlined the risks and response measures for COVID-19, including shipboard measures to address risks and management procedures in the event of COVID-19 cases onboard a vessel. The guidance contains vital information on matters from embarkation to safe repatriation, including the health protocols to which seafarers must adhere while onboard, as well as crew disembarkation. The webpage publication also includes information on vaccination, crew change, and shore leave to assist not only seafarers but also government quarantine officials, port service personnel, and ship operators.

4.2.3 United Nations Conference on Trade and Development (UNCTAD)

UNCTAD is a permanent organization that is part of the UN General Assembly. It was established in 1964 with the mission of promoting international trade and economic growth, as well as human development while acknowledging the critical role played by the world's 1.9 million seafarers, who transport more than 80 percent of global trade.¹⁷⁵

Since 1968, UNCTAD has issued a flagship study titled "Review of Maritime Transport" that examines the structural and cyclical changes impacting seaborne trade, ports, and shipping, as

¹⁷³ UN Global Compact, "Maritime Human Rights Risks and The Covid-19 Crew Change Crisis A Tool To Support Human Rights Due Diligence", 2022

¹⁷⁴ ICS, "Shaping the Future of Shipping, What ICS does and the benefits of membership", 2020, <https://www.ics-shipping.org/wp-content/uploads/2020/11/ICS-Brochure-2020.pdf>

¹⁷⁵ UNCTAD, "United Nations bodies call for further action to end seafarer crisis", 28 February 2022, <https://unctad.org/news/united-nations-bodies-call-further-action-end-seafarer-crisis>

well as a comprehensive compilation of maritime trade and transport statistics.¹⁷⁶ The 2021 edition of the report includes a special chapter titled “The COVID-19 seafarer crisis” that focuses on the industry’s response to the COVID-19 pandemic, covering the current difficulties of seafarers’ health, safety, security, and welfare, as well as the global economic and individual humanitarian implications of these issues. Regarding this objective, the report discusses the issue of crew changes, which has been one of the most significant challenges posed by COVID-19, highlighting the fact that a considerable number of seafarers must embark and disembark their ships each month for leave and then return to work. Despite this, various significant obstacles have arisen as a result of the epidemic, such as terminals prohibiting crews from disembarkation, a lack of international flights, and seafarers having trouble acquiring visas or travel permits to transit between economies. This intensified subsequent problems such as increased crew fatigue and the illegitimate extension of contracts and violation of international labor standards, resulting in the unsafe operation of vessels. The report introduced mitigating actions with international communication and cooperative initiatives proposing a number of potential solutions, as follows: designating seafarers and other maritime personnel as key workers; applying greater flexibility in terms of crew changes; providing seafarers with priority access to COVID-19 vaccines; ensuring air connectivity to key maritime hubs for seafarers; developing or harmonizing frameworks to ensure the safe passage of crews; and ensuring swift and effective responses.

4.2.4 European Maritime Safety Agency (EMSA)

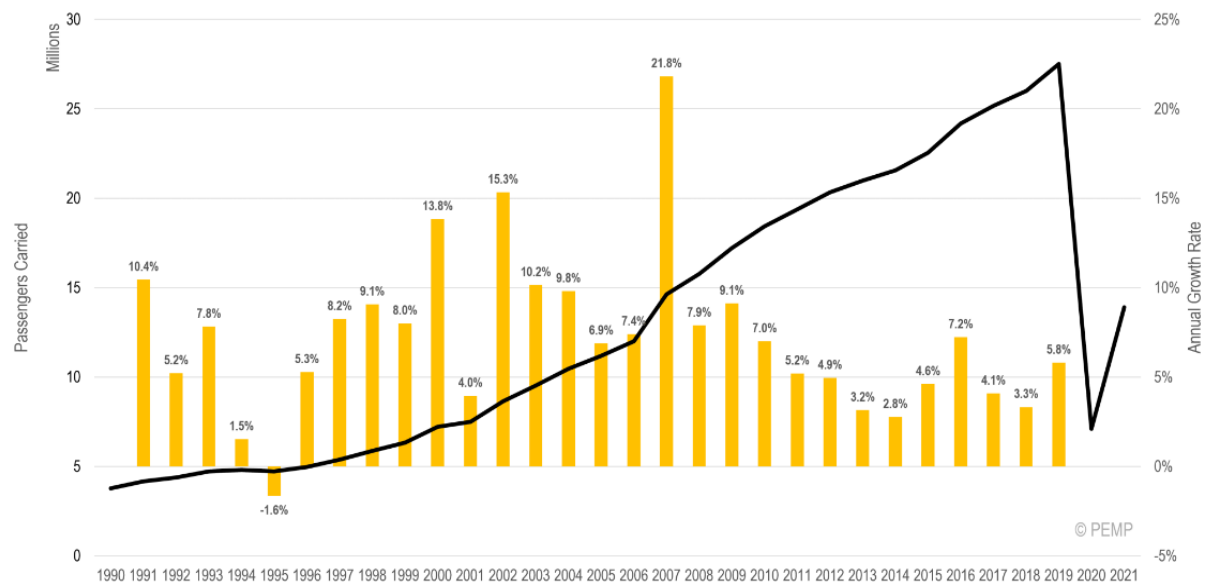
The EMSA is a part of European Union (EU) charged with minimizing the risks of maritime accidents, marine pollution caused by ships, and maritime fatalities through assisting in the implementation of EU law. As a response to the COVID-19 pandemic, EMSA handles a number of response plans, with a special emphasis on guidance on cruise ships. In light of the fact that the European cruise market is one of the largest in the world¹⁷⁷, the negative impact of the pandemic has been enormous; for instance, the number of cruise passengers originating

¹⁷⁶ UNCTAD, “Review of Maritime Transport”, 2021

¹⁷⁷ Statista, “Cruise industry in Europe - statistics & facts”, 20 July 2021, <https://www.statista.com/topics/4211/cruise-industry-in-europe>

from Europe in 2018 recorded at seven million decreased to less than one million in 2020¹⁷⁸¹⁷⁹.

Figure 22. Number of global passengers carried on cruise ship per year



[Source: Extracted from [https:// porteconomicsmanagement.org](https://porteconomicsmanagement.org)]

In this regard, EMSA produced “COVID-19: EU Guidance for Cruise Ship Operations” with the intent of guiding cruise ship operators through the gradual and safe resumption of operations following the COVID-19 pandemic.

The cruise ship industry and marine passenger transportation were exposed as particularly vulnerable to the negative impacts of the COVID-19 pandemic given the very confined environment in which physical interactions take place onboard these vessels. This posed an increased risk of virus transmission and dissemination. Moreover, a ship’s ventilation system, which, compared to an airplane equipped with High-Efficiency Particulate Air (HEPA) filters capable of removing at least 99.97 percent of viruses, is not capable of covering a large area over an extended period, thus rendering it less effective at preventing virus transmission through the use of purified air.

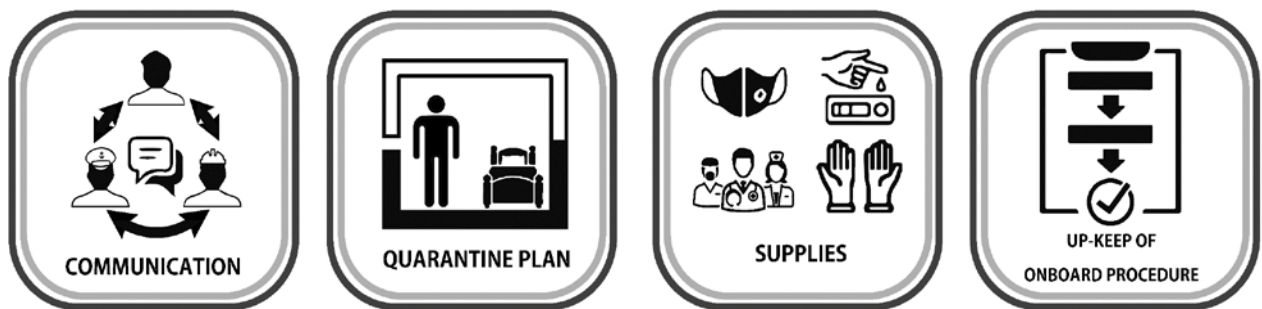
Taking these factors into consideration, a single COVID-19 infection onboard a cruise ship

¹⁷⁸ Port Economics, Management and Policy, “Global Cruise Passengers Carried and Growth Rates, 1990-2021”, [https:// porteconomicsmanagement.org/pemp/contents/part1/ports-and-cruise-shipping/global-cruise-passengers-carried-rates/](https://porteconomicsmanagement.org/pemp/contents/part1/ports-and-cruise-shipping/global-cruise-passengers-carried-rates/)

¹⁷⁹ Statista “Number of ocean cruise passengers worldwide in 2019 and 2020, by region”, <https://www.statista.com/statistics/287111/cruise-passengers-by-source-country/>

brings significantly greater risk than a similar outbreak onboard a merchant ship. In this regard, the data strongly suggest the following response actions to effectively control the risk of COVID-19 infection: establishing well-coordinated isolation and treatment plans for the infected crew member or passenger; establishing internal and external communication procedures; developing a supply plan for personal protective equipment (PPE), medical supplies, and human resources; and maintaining onboard procedures and guidelines.

Figure 23. Response actions suggested for controlling the risk of COVID-19 infection



4.2.5 International Labour Convention (ILO)

ILO is a UN body responsible for promoting social and economic justice through the definition of worldwide labor standards as well as promoting and strengthening labor rights, decent work opportunities, social protection, and international forums to solve labor concerns. In accordance with their responsibilities, the ILO's responses to COVID-19 prioritized human rights and working conditions by adopting the resolution on "Global call to action for a human-centered COVID-19 recovery" in June 2021. This resolution sought to prioritize the creation of decent jobs for all and to address the inequalities caused by the crisis.

Concerning seafarers, MLC 2006 was enacted to advocate for their basic human rights. As of March 30, 2022, 101 member states had ratified the convention. It details every aspect of a seafarer's employment and life at sea, including the minimum wage, rest hours, repatriation, and employer liability.

Despite this, several economies have yet to comply with the standards set out in MLC as the challenges posed by COVID-19 have intensified (e.g., allowing crew change and access to medical care). The governing body of the ILO adopted the "Resolution concerning maritime labor issues and the COVID-19 pandemic" on December 8, 2020, in response to this dilemma. The resolution urged all economies to take appropriate measures during the pandemic to fully implement the Convention in both law and practice, as well as emphasizing that the existing and potential human rights implications of the COVID-19 pandemic on seafarers must not be ignored, and that due diligence must be exercised to comply with MLC regulations.

In addition, the ILO passed a resolution in April 2021 titled "Resolution concerning the implementation and practical application of the MLC 2006, during the COVID-19 pandemic." This urged economies to recognize seafarers as key workers and to treat them as such. It encouraged access to COVID-19 immunization for seafarers at the earliest available opportunity and promoted the mutual acceptance of vaccine certificates. In support of this, the ILO adopted its own measure, "Resolution concerning COVID-19 vaccination for seafarers," which advocated the implementation of a global vaccination program for seafarers.

4.3 Global Challenges: Seafarer Vaccination and Designation as Key Workers

4.3.1 The Role of Seafarers in the COVID-19 Pandemic

The IMO adopted “Seafarers: at the core of shipping’s future” as the theme for World Maritime Day 2021, highlighting the clear need to promote awareness of seafarers’ crucial role in global trade.¹⁸⁰ As stated by the UN Secretary-General during World Maritime Day celebrations, in addition, seafarers play a “indispensable role securing vital global supply chains and transporting over 80 percent of world trade in extraordinarily challenging times” and therefore it is highly requested for us to “pay tribute to the professionalism and resilience of seafarers.”¹⁸¹ Throughout the pandemic, the world’s 1.9 million seafarers played a key role in keeping ships running and ensuring the delivery of essential supplies including food, medical equipment, and vaccines, while simultaneously serving as the front line of the health crisis.

In addition to their contribution to transportation logistics during this crisis, seafarers play crucial roles in supporting their economies by producing incomes and providing for their family in their home communities. This has become significantly more emphasized in the APEC region, considering the facts that four of the world's top five seafaring economies are located in the region (i.e., China; Indonesia; Philippines; and Russia)¹⁸², while a considerable number of APEC economies rely on maritime and port logistics business. For this reason, the UN expressed concerns about the significant loss of income for seafarers, resulting in extreme hardship for both them and their families.¹⁸³ Ironically, the pandemic has highlighted the crucial role of seafarers that had previously been overlooked.¹⁸⁴ It is evident that the key to a successful socioeconomic recovery on a worldwide scale lies in intelligent, resilient, and environmentally friendly marine transportation as a process in which seafarers will play a significant role.

¹⁸⁰ IMO, “World Maritime Theme 2021”, accessed 10 June 2022, <https://www.imo.org/en/About/Events/Pages/World-Maritime-Theme-2021.aspx>, <https://www.imo.org/en/About/Events/Pages/World-Maritime-Theme-2021.aspx>

¹⁸¹ UN, “UN recognizes work of 2 million seafarers in ‘extraordinarily challenging times’”, 30 September 2021, accessed 10 June 2022, <https://news.un.org/en/story/2021/09/1101782>

¹⁸² BIMCO/ICS, “Seafarer Workforce Report”, 2021

¹⁸³ UNCTAD, “United Nations bodies call for further action to end seafarer crisis”, 28 February 2022, <https://unctad.org/news/united-nations-bodies-call-further-action-end-seafarer-crisis>

¹⁸⁴ ISWAN, “Seafarers and abandonment: The impact on wellbeing”, July 26 2021, <https://www.seafarerswelfare.org/news/2021/seafarers-and-abandonment-the-impact-on-wellbeing>

4.3.2. The Nature of Seafaring

While it is unquestionable that seafarers have played a critical role during the global pandemic, various factors unique to this group of workers render them more vulnerable in the event of emergencies such as COVID-19 compared to transportation professionals who work in the air or on land, as outlined below:

First, seafarers spend most of their working lives at sea, with infrequent port calls. Even when staying in ports, port-related responsibilities, such as cargo operations, restrict their access to shore services. Once cargo operations are complete, preparations must be made for the ship's departure to the next port of call, which may involve another lengthy journey lasting several months.

Second, the operation of a vessel is inherently highly labor-dependent, requiring the input of every single member of the crew. Since even extremely large vessels with a DWT of 300,000 generally carry a maximum of 25 crew members at any given time, there is very little room for flexible crew rotation if a crew member becomes ill or wishes to relax while recovering from vaccination.

Third, the onboard workforce comprises crew members from diverse cultural and linguistic backgrounds. With the globalization of the shipping sector, the complexity of the crewing industry has increased. This has become more prevalent as an increasing number of maritime corporations outsource labor to third-world crewing agencies, meaning a vessel's crew consists of a diverse range of nationalities. To further illustrate this point, a ship with a crew of more than 15 nationalities requires crewing management that encompasses the entire process, from airline ticketing and hotel registration to onshore transportation, all of which require clearance through a variety of immigration, customs, and quarantine procedures in different economies. The establishment of a single, unilateral norm for crewing policy may therefore be viewed as a challenging task.

Fourth, the operation of a vessel is fraught with unpredictability, particularly regarding the schedules of ocean transport services. Trampers, for example, whose paths are undefined and vary based on constant fluctuations in the market price of cargoes (e.g., a laden crude oil carrier

en route may only be notified of its destination port at the very last minute after the charterers have found a suitable contractor offering an acceptable price for the oil), are not able to practically establish a stable, long-term personnel and vessel operation strategies.

Similar to other transportation industries, the crewing industry is constrained by the operational systems of ships, which are highly dependent on the types of cargo being transported. This means that seafarers cannot easily transit between different types of vessels without the necessary experience and certifications. Those seeking to join type-specific vessels (e.g., cruise ships, tankers, chemical ships, or icebreakers) must therefore meet various additional education and training requirements not covered by their general CoCs. These extensive training programs may require months of prior experience on particular types of vessels. Due to the limited supply of seafarers, employers are also limited in their ability to secure an adequate workforce onboard.

Last but not least, due to the confined nature of the work environment onboard, ships are comparatively more susceptible to the spread and transmission of viruses than other settings. Moreover, ventilation, air conditioning recirculation, and the intake of outside air are largely limited, thus increasing the risk of viral transmission in the event of a disease outbreak onboard.

4.3.3. Seafarer's Vaccination

The Status of seafarers' vaccinations

As COVID-19 vaccines have proven to have a modest effect on reducing disease severity, transmission, and death rates ¹⁸⁵, most economies have come to rely on vaccination to ensure the safety of their citizens. As of December 2021, over nine billion COVID-19 vaccine doses had been administered globally, and 48 percent of the world's population had received the primary vaccination series.¹⁸⁶ Continual international cooperation has played a crucial role in the distribution of vaccines. In March 2022, the World Bank stated that it had approved \$8 billion worth of activities to aid in the distribution of vaccines across 70 economies.¹⁸⁷ As of

¹⁸⁵ WHO, "WHO Sage Roadmap for Prioritizing Use of Covid-19 Vaccines", Last updated on 21 January 2022, <https://apps.who.int/iris/rest/bitstreams/1406385/retrieve>

¹⁸⁶ UNICEF, "Donate doses now", accessed 10 June 2022, <https://www.unicef.org/coronavirus/donate-doses-now>

¹⁸⁷ WHO, "Accelerating COVID-19 Vaccine Deployment", 20 April 2022

January 2022, WHO had provided over 1 billion doses of vaccines to 144 economies and territories through its COVAX (COVID-19 Vaccines Global Access) scheme, a worldwide collaboration to speed up the development, manufacture, and equitable access to COVID-19 testing and treatments.¹⁸⁸ In addition, WHO swiftly released plans and guidelines to increase global vaccination efforts to cover up to 70 percent of the world's population by mid-2022.¹⁸⁹ Individual economies also increased their vaccine programs, resulting in growing evidence of a pandemic recovery.¹⁹⁰ Nonetheless, huge inequalities in vaccine access and vaccination coverage persist globally, with some economies reporting coverage rates of below 5 percent at the end of December 2021, while others reported rates exceeding 80 percent.¹⁹¹

In the transportation sector, international organizations and individual economies have vociferously advocated for increasing the vaccination rates of seafarers.¹⁹² In March 2021, IMO, ICAO, ILO, WHO and IOM issued a joint statement on the prioritized vaccination of seafarers and aircrews. The leaders of these five UN bodies emphasized the importance of transportation workers in global trade and mobility, which is critical for long-term socioeconomic recovery.¹⁹³ Following this, the IMO Maritime Safety Committee adopted Resolution MSC.490 (103), "Recommended action to prioritize COVID-19 vaccination of seafarers," in May 2021, recommending that member states and relevant government agencies prioritize seafarers in their domestic COVID-19 vaccination programs, as far as practicable, while also taking into account the WHO Strategic Advisory Group of Experts on Immunization (SAGE) Roadmap.¹⁹⁴ This resolution emphasized that despite the extremely limited availability of COVID-19 vaccinations worldwide, seafarers must be prioritized due to their vital role, and international cooperation in combating the pandemic should be enhanced by extending COVID-19 vaccinations to seafarers of other nationalities.

¹⁸⁸ UNICEF, "COVAX: 1 billion vaccines delivered", 19 January 2022, accessed 10 June 2022, <https://www.unicef.org/supply/stories/covax-1-billion-vaccines-delivered>

¹⁸⁹ WHO, "Strategy to Achieve Global Covid-19 Vaccination by mid-2022", 6 October 2021, <https://www.who.int/publications/m/item/strategy-to-achieve-global-covid-19-vaccination-by-mid-2022>

¹⁹⁰ UNCTAD, "Review of Maritime Transport", 2021

¹⁹¹ WHO, "Who Sage Roadmap for Prioritizing Use of Covid-19 Vaccines", Last updated 21 January 2022

¹⁹² IMO, "IMO's Kitack Lim urges fair vaccine distribution for seafarers", 11 May 2021, accessed on 25 May 2022, <https://www.imo.org/en/MediaCentre/PressBriefings/pages/SG-Vaccination-Statement-May21.aspx>

¹⁹³ ILO, "Seafarers and aircrew need priority COVID-19 vaccination", 26 March 2021, https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_776797/lang--en/index.htm

¹⁹⁴ IMO, "Resolution MSC.490(103)", adopted on 14 May 2021

In addition to these initiatives, several maritime organizations have addressed vaccination issues for seafarers. ICS has published different vaccination guidelines for seafarers, including “COVID-19: Legal, liability, and insurance issues arising from the vaccination of seafarers,” “Practical guide on vaccination for seafarers and shipowners,” and “Coronavirus (COVID-19): Roadmap for vaccination of international seafarers.”¹⁹⁵ The vaccination program for seafarer is headed in a constructive direction thanks to these activities. According to the Neptune Declaration Crew Change Indicator, only 15.3 percent of seafarers were vaccinated in August 2021; however, this had risen to 72.8 percent by March 2022, approaching the rates in various large shipping economies in Europe, North America, and Asia.¹⁹⁶

This success can be attributed, to some extent, to the efforts that economies have made to prioritize vaccinations for seafarers. For instance, Australia has offered cost-free vaccinations to vessels that have a regular schedule of calling at Australian ports. The Netherlands provides free vaccinations to any seafarers employed on Dutch-owned or managed vessels. Several European economies, including Norway, the United Kingdom, Italy, and Belgium, have run campaigns offering vaccinations to seafarers entering and berthing at their ports.¹⁹⁷ Similar vaccination campaigns have been implemented in the United States, Canada, and Singapore.

However, numerous issues continue to require in-depth discussions to ensure an effective response to seafarers’ vaccinations and establish a response plan for future potential COVID-19 variants and other pandemics. As a result of their international travel, seafarers face an elevated risk of regularly contracting COVID-19. And despite being at the forefront of the global epidemic, they have typically been excluded from receiving vaccinations due to their offshore, onboard work environment. Given the still-evolving nature of novel variations such as Omicron, along with other emerging illnesses, a long-term perspective should be taken

¹⁹⁵ ICS, “Coronavirus (COVID-19): Roadmap for Vaccination of International Seafarers”, 2021, <https://www.ics-shipping.org/publication/coronavirus-covid-19-roadmap-for-vaccination-of-international-seafarers/>

¹⁹⁶ Global Maritime Forum, “The Neptune Declaration, Crew Change Indicator”, March 2022, <https://www.globalmaritimeforum.org/content/2022/03/The-Neptune-Declaration-Crew-Change-Indicator-March-2022.pdf>

¹⁹⁷ GVZH, “Covid-19 Vaccinations and Seafarers: An Overview”, 21 March 2022, <https://gvzh.mt/insights/covid-19-vaccinations-and-seafarers-an-overview/>

regarding vaccinations for seafarers.¹⁹⁸

The WHO's vaccine priority framework

As previously stated, a number of UN bodies and the IMO recommended prioritizing the vaccination of seafarers in accordance with the WHO's SAGE Roadmap, which specifies the development of a vaccine distribution strategy. According to the report, vaccination programs have four major objectives: i) minimize deaths, severe disease, and the overall disease burden, ii) curtail the impact on the health system, iii) fully resume socioeconomic activity, and iv) reduce the risk of new variants.

Given the different stages of vaccination supply availability in each economy, WHO developed a framework to provide a valuable foundation for priority target groups for COVID-19 vaccines. The fundamental purpose of the framework is to assist policymakers and expert advisors at the global, regional, and domestic levels in allocating and prioritizing COVID-19 vaccinations. This is further illustrated in Table 13.

¹⁹⁸ UK parliament, "Addressing COVID-19 in the long-term—the role of immunization", 24 February 2022, <https://post.parliament.uk/addressing-covid-19-in-the-long-term-the-role-of-immunisation/>

Table 13. Prioritized use of primary series and booster doses by vaccine coverage rates in higher priority-use groups

Priority-use groups	Vaccine coverage rates higher priority-use (I&II) groups			
	Low	Moderate	High	Very high
I. Highest priority-use - Other adults - Health workers - Immunocompromised persons	Primary series + additional dose/boosters			
II. High priority-use - Adults with comorbidities - Pregnant persons - Teachers and other essential workers - Disadvantaged sociodemographic subpopulations at higher risk of severe COVID-19	Primary series + boosters			
III. Medium priority-use - Remaining adults - Children and adolescents with comorbidities			Primary series + boosters	
IV. Lowest priority-use - Healthy children and adolescents				Primary series + boosters

[Extracted from WHO SAGE for prioritizing use of COVID-19 vaccines, 2022]

As illustrated in Table 13, the highest priority for vaccination coverage should be people at the greatest risk of severe illness. Thus, the first tier comprises older people, health professionals, and immunocompromised individuals who are either at risk of hospitalization or are involved in activities aimed at mitigating deaths and the burden of illness from the COVID-19 pandemic. The second high-priority group consists of four categories, namely adults with comorbidities, pregnant persons, teachers, and other essential workers, and disadvantaged sociodemographic subpopulations at greater risk of severe COVID-19 infection. The third priority category contains the remaining adults and children and adolescents with comorbidities, while the lowest-priority group comprises healthy children and adolescents.

To assess where the seafarers lie within these priority groups, it is worth focusing on the second tier, which includes the group *essential workers*. The technical report “WHO SAGE values framework for the allocation and prioritization of COVID-19 vaccination” explains the

importance of essential workers as follows: “(workers) being in good health is critical to securing the well-being of others.” The research also underlines the importance of protecting essential workers from COVID-19, particularly those who work in occupations where remote work or physical separation is not possible while on the job. In line with this, the WHO vaccination value framework prioritizes human resources working in the transportation sector under the value of “protect the continuing functioning of essential services.”¹⁹⁹

According to the findings of the report, transportation services are necessary to ensure the continuity of economic activities. In particular, shipping transportation is essential because it is by far the most effective way to move mass goods, which account for the largest proportion of internationally transferred cargo.²⁰⁰ In this regard, personnel in the aviation industry and those who work on ships should both be recognized as essential groups that need vaccinations. The “WHO SAGE roadmap for prioritizing the use of COVID-19 vaccines” classified seafarers and aircrews as essential workers and added them to the second-highest priority category in July 2021²⁰¹, advocating their safe cross-border engagement in international travel.

Challenges and obstacles that hamper the flexibility of seafarers’ vaccinations

According to the Centers for Disease Control and Prevention (CDC), a series of vaccinations is required to ensure appropriate protection against COVID-19, depending on the type of vaccine and the individual’s health status. In the latest report from WHO, all vaccines, from primary doses up to booster shots, should be administered at particular intervals to ensure the proper immune response. This interval is typically somewhere between three weeks and five months; however, it should be neither too short (a minimum interval is required for immunogenicity and increased seroprevalence rates) nor too long (effectiveness and protection will wane over time).²⁰² In some cases, the optimal timing of the primary vaccination series and booster dose may differ by individual, while the number of doses and the inter-dose interval,

¹⁹⁹ WHO, “WHO SAGE values framework for the allocation and prioritization of COVID-19 vaccination”, 14 September 2020, https://apps.who.int/iris/bitstream/handle/10665/334299/WHO-2019-nCoV-SAGE_Framework-Allocation_and_prioritization-2020.1-eng.pdf

²⁰⁰ IMO, “Introduction to IMO”, accessed 10 May 2022, <https://www.imo.org/en/About/Pages/Default.aspx>

²⁰¹ WHO, “WHO Sage Roadmap For Prioritizing Use Of Covid-19 Vaccines”, Last updated on 21 January 2022

²⁰² WHO, “The Sinopharm COVID-19 vaccine: What you need to know”, 10 June 2022, <https://www.who.int/news-room/feature-stories/detail/the-sinopharm-covid-19-vaccine-what-you-need-to-know>

as well as the need for booster doses, may differ depending on the environment.^{203 204}

These complex inoculation requirements would not impede the vaccination process for land-based staff but may pose a challenge for seagoing professionals. Seafarers' shore leave is mainly dependent on the vessel's schedule; hence, seafarers may miss the opportunity to receive a vaccination due to tight voyage spans. While in port, seafarers remain responsible for performing their tasks, which include ship inspections, cargo operations, and the loading of items from equipment to daily commodities. This context therefore poses significant constraints on the way and location in which seafarers can receive vaccinations, as well as their flexibility in scheduling shore leave.

Even when seafarers are granted shore leave to receive vaccines, the possibility remains that labor shortages will impede the post-vaccination recovery period of one to two days.²⁰⁵ As mentioned earlier, the way in which ships operate with a very limited number of crew members renders it challenging for senior-level staff (such as the Captain and Chief Officers) to handle the operational responsibilities onboard with flexibility if several crew members require vaccinations ashore. In addition, since the majority of ships are operated by crew members originating from a number of cultures and economies, it may be particularly difficult for maritime employers to devise an efficient rotation plan as well as a standard policy for health and cleanliness onboard.

Due to the aforementioned challenges, each administration should create vaccination programs for those who work on ships with greater caution and care. Given the nature of the job performed on ships, it is likely that the implementation of vaccination measures will prove to be a challenging task. There will be no standard set of protocols to facilitate the vaccination

²⁰³ WHO, "Interim statement on hybrid immunity and increasing population seroprevalence rates", 1 June 2022, <https://www.who.int/news/item/01-06-2022-interim-statement-on-hybrid-immunity-and-increasing-population-seroprevalence-rates>

²⁰⁴ Government of Canada, "COVID-19 vaccine: Canadian Immunization Guide", 2 June 2022, <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-26-covid-19-vaccine.html>

²⁰⁵ CDC, "Post-vaccination Considerations for Workplaces", 7 Mar 2022, <https://www.cdc.gov/coronavirus/2019-ncov/community/workplaces-businesses/vaccination-considerations-for-workplaces.html>

process for maritime professionals due to the distinct circumstances for each economy (i.e., different seropositivity rates, degree of infection-induced protective immunity group, community transmission rate, vaccination capacity). However, consideration must also be given, for example, to promoting seafarers' vaccinations, developing strategies to improve vaccine availability, and incentivizing shipping companies that advocate vaccination.

4.3.4. Appointing Seafarers as Key Workers

In the early phases of the recent pandemic, the maritime sector urged the UN and the international community to recognize seafarers as key workers so that the administration could secure the flow of essential goods, energy, food, and medicines in these unprecedented circumstances.

Various statements, declarations, and letters issued by international organizations, economies, and other stakeholders in the maritime sector continuously reaffirmed these calls for seafarers to be recognized as key workers.²⁰⁶ Such a designation would provide the following benefits. First, it would enable unrestricted movement when embarking or disembarking a vessel for crew changes. Second, seafarers in need would be able to access rapid medical assistance. Third, seafarers would have better access to vaccinations in the future, as more economies came to view them as a high-priority vaccination group, thereby increasing seafarers' access to vaccines. Fourth, there is the potential for economies to coordinate their efforts more effectively to extend, recognize, and exempt certifications and documents for seafarers' vaccinations.

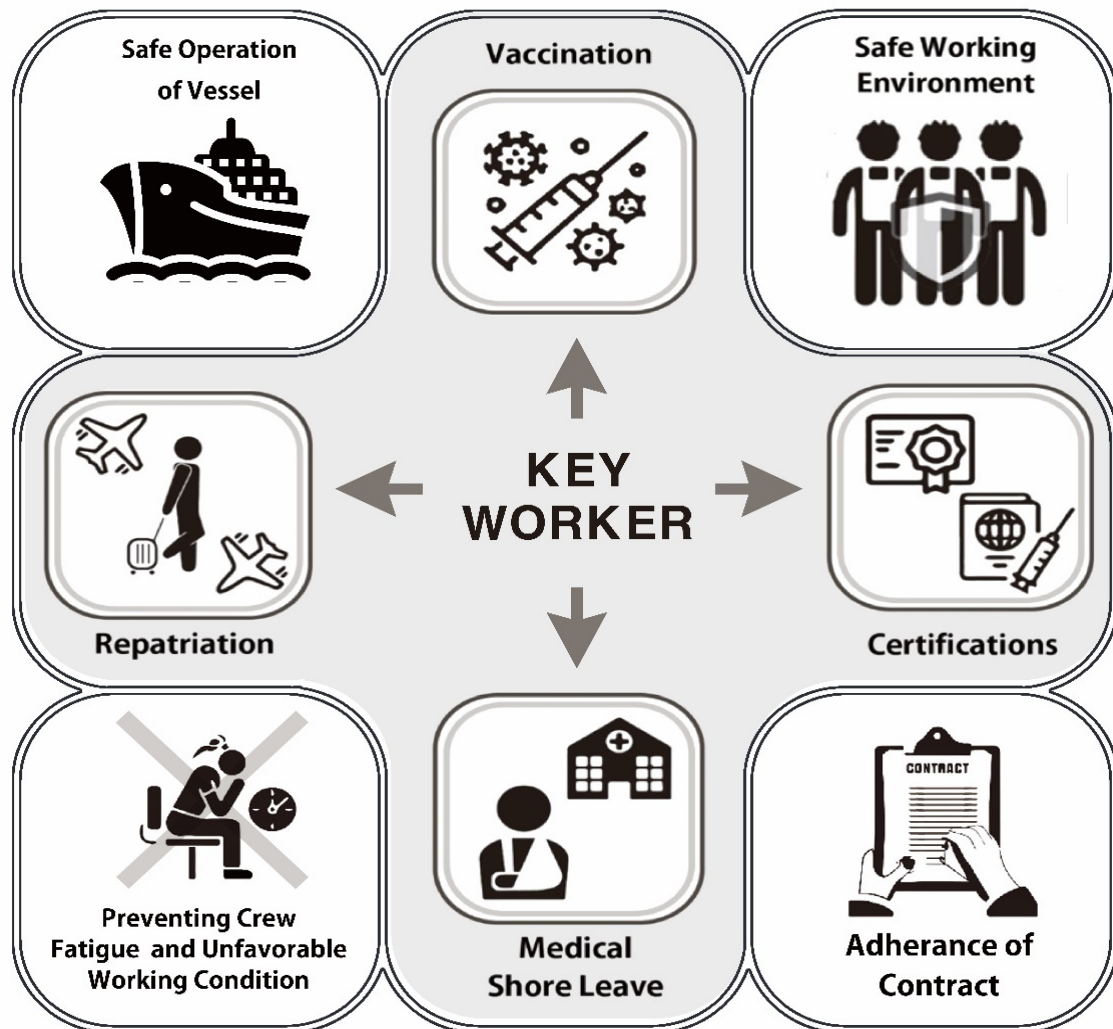
The approach described above would yield additional benefits.²⁰⁷ First, ship operators and owners would be able to meet their contractual obligations to seafarers with a more practicable crew change system. Second, crew members would have access to the necessary PPE and vaccines, all of which would contribute to the establishment of a safe onboard working environment. In addition, timely crew changes would help in reducing crew fatigue and thus enhance the physical and mental health of crew members, contributing to the long-term safety

²⁰⁶ ILO, "Information note on maritime labour issues and coronavirus (COVID-19)", 3 February 2021, https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/genericdocument/wcms_741024.pdf

²⁰⁷ ILO, IMO, UNCTAD, WHO, "Joint Statement Urging Continued Collaboration to Address the Crew Change Crisis, Safeguard Seafarer Health And Safety, And Avoid Supply Chain Disruptions During the Ongoing Covid-19 Pandemic", 28 February 2022

of vessel navigation and operation.

Figure 24. Benefits of designating seafarers as key workers



In light of this, the following steps should be taken to designate seafarers as key workers²⁰⁸: 1) implement protocols to ensure safe crew changes on ships, 2) ensure that seafarers have access to medical care, 3) implement waivers, exemptions, or other changes to visa or documentary requirements that might normally apply to seafarers, and 4) expand seafarers' access to vaccinations regardless of nationality. Applying these measures could also go some way to alleviating other concerns that appear unrelated to the COVID-19 pandemic, including mental health, onboard fatigue, contract compliance, and safe vessel navigation.

²⁰⁸ UNCTAD, "Review of Maritime Transport", 2021

Given that, as of 12 January 2021, only about fifty-five economies had designated seafarers as key workers according to IMO²⁰⁹ and seafarers-related international bodies such as ILO are currently encouraging more economies to participate. All economies are strongly recommended to take action to designate seafarers as key workers, adopt and reflect international standards, and recommend procedures in accordance with public health concerns and domestic transportation regulations.

4.4. Further Response Requested

Depending on the nature of the organization and the stakeholders it represents, each seafarer-related entity conveys its own perspective on COVID-19 through press releases, publications, and international guidelines. Although there may be differences in the areas of particular focus, shared measures, and proactive actions, the following schemes have been proposed to minimize the negative effects of COVID-19 and future potential pandemics on seafarers and the global supply chain:

- Designate seafarers as key workers, which can serve as a foundation for addressing existing challenges including repatriation, medical care, shore leave, travel restrictions, and vaccinations.
- Implement immediate and effective measures that can facilitate crew change, which has been identified as one of the primary concerns during the pandemic. Collaboration among governments, industry, and relevant international organizations must ensure that effective and efficient measures are adopted to facilitate crew changes in accordance with international standards and recommendations.
- Prioritize seafarer vaccination. Governments, agencies, the commercial sector, and international organizations are urged to work to guarantee that maritime personnel receive COVID-19 vaccinations on a priority basis and to consider increasing access to COVID-19 vaccines to seafarers of other nationalities. Such actions include but are not limited to 1) minimizing the formalities for crew embarkation and disembarkation; 2) streamlining the procedures associated with crew changes by recognizing

²⁰⁹ IMO, "Circular Letter No. 4204/Add.35/Rev.2: Coronavirus (COVID-19) – Designation of seafarers as key workers", 12 January 2021

standardized seafarer identification certificates; and 3) accepting official seafarer identification documents and other STCW certificates as evidence of professional seafarer status for crew changes.

- Permit greater flexibility in the certificates and endorsements required for vessel operation, crew management, and seafarer travel abroad. The expansion of seafarers' vocational and medical certifications should be prioritized, and consideration should be given to extending certification in the areas of vessel surveys, inspections, audits, and safety.
- Provide alternatives and a systematic approach for crew education and training, given that extending seafarers' certification due to the closure of seafarer training facilities in the case of a pandemic remains an ongoing concern. Administration, MET institutions, and the maritime industry should explore the potential for transitioning to a distance-learning paradigm using digital technologies and remote services.
- Actively implement mutually agreeable and accepted best practices, such as containing the virus, maintaining social distance, limiting worker interaction, shortening work hours, and encouraging remote work, if they have been proven effective in addressing existing issues during shipping and port operations.
- Expand the scope of pandemic protective measures to include all essential marine employees, given that maritime logistics requires tightly connected and seamless cooperation among essential workers from various onboard and ashore parties, including pilots, vessel traffic operators, harbor masters, mooring tugs, dredger crews, ship suppliers, terminal operators, and others. Promote the use of electronic solutions for ship-to-shore, administrative, and commercial interactions between all entities operating in a port and ships to reduce the risks posed by interaction or the exchange of documents.
- Maintain an up-to-date applicable legislative framework provided by international guidelines such as ILO and IMO to reconcile the legal framework with international standards and ensure the implementation of international obligations.

SECTION 5. CONCLUSION AND RECOMMENDATIONS

To maximize the APEC cross-border labor mobility of seafarers for the digital age, the following research questions were posed as the basis for the investigation of this research.

- i. What are the impacts of seafarers' labor mobility on the shipping industry and economic growth within the APEC region?
- ii. What types of challenges and barriers do individual seafarers, industry, and economies face in terms of seafarers' labor mobility issues?
- iii. What collaborative actions can be taken under the APEC umbrella to maximize the cross-border labor mobility of seafarers?
- iv. What are the influences of COVID-19 on seafarers' labor mobility?

In light of the preceding investigations, the following conclusions and recommendations can be drawn:

For the first question, which examines the impacts of seafarers' labor mobility on the shipping industry and economic growth in the APEC region:

- In the sense that over 80 percent of global commerce volume is transported by vessels, the international shipping industry is critical to the long-term sustainability of the global economy. Given that a highly internationalized seafaring workforce constitutes the foundation of ship operations, the successful operation of the shipping industry is directly dependent on and interconnected with the timely, flexible, and efficient supply of skilled seafarers;
- As the world becomes more interconnected, along with an increase in the movement of goods, services, and labor, enhancing seafarers' labor mobility across international borders has become an issue of increasing importance within the shipping industry, where seafarers are the driving force;

- It should also be acknowledged that seafarers from 21 APEC economies are not only an indispensable source of human capital for the global maritime industry but are also pivotal in providing support to their economies as a major industrial pillar, specifically in developing economies where the skills development and labor mobility enhancement of human resources is essential, especially in the creation of sustainable and inclusive regional growth;
- The promotion of seafarers' labor mobility by establishing a systematic support system that extends recruitment, career development, and job transition can thus provide economic and social benefits not only to major seafarer-supplying economies (e.g., China; Indonesia; Malaysia; the Philippines; and Viet Nam) but also to economies (e.g., Hong Kong, China; China; Japan; Republic of Korea; and Singapore) that require a steady supply of well-qualified seafaring manpower;
- When considering that seafarers who have accumulated experiences onboard and are looking for ship-to-shore labor mobility can be an invaluable asset to the wider global maritime industry on shore, coordinated efforts should be made to establish systematic and multi-layered support packages to promote safe and sustainable seafaring careers by enhancing promising onboard opportunities (e.g., career progression and reasonable rewards), as well as to develop a coordinated job-transition framework that can assist and map out future career paths in the broader maritime industry;
- In this regard, continuous research on seafarers' labor mobility issues, the development of a digital platform for promoting their job entry, and capacity-building conferences with job fairs to foster dialogue on existing barriers and set the future directions of collaboration with the direct engagement of owners, academia, and maritime administrations will be especially important as supporting tools to encourage seafarers' career entry and maintain their sustainable growth;
- The applications on the digital platform should be accessible by all stakeholders (e.g., government administrations, institutions, shipowners, seafarers) for job creation, educational development, and stakeholder input. The active utilization of this digital

platform will also ultimately support the APEC Action Plan for Promoting Quality Employment and Strengthening People-to-People Connectivity through Human Resources (2015–2018). In light of this, future activities should be encouraged to improve the breadth of information, including career openings in the broader maritime sector where the skills and experiences gained by seafarers can be acknowledged and rewarded;

- In achieving the above, before switching careers from ship to shore, seafarers must have a thorough understanding of the available work prospects and career needs ashore, particularly in today's fast-paced and competitive business environment. This would enable seafarers to set clear goals along their professional paths while considering the potential constraints, and further provide them with opportunities to learn ahead of time about the transferable qualifications or skills that will be required onshore. By preparing in this manner, seafarers will be exposed to broader career options and gain the ability to properly prepare the qualifications required to develop a solid long-term career plan.

In response to the second question, which asks about the types of challenges and barriers facing individual seafarers, industry, and economies in terms of seafarers' labor mobility issues, the following factors are pointed out:

- **Individual barriers:** Nationality, the economy of CoC issuance, and the absence of mutual recognition of CoCs have all been recognized as individual barriers to entry into international shipping companies. A lack of educational and training experience and opportunities, such as onboard training, limited experience with a particular type of vessel, the absence of additional training requirements imposed by the flag state or shipping company beyond STCW, and references from previous shipping companies, are reported as further barriers. Seafarers face challenges in developing the experience required to reach high commercial requirements, in addition to the advancing technological specialization of the maritime industry, which requires regional infrastructure and substantial individual training expenditures. Due to the multinational and cross-cultural nature of the international shipping business, a set of

soft skills is regarded as a determining factor for cross-border mobility, which effectively constitutes an invisible employment barrier.

- **Industrial barriers:** The first barrier to overcome is the lack of mutual recognition of CoCs between economies, which results in a preference for a certain CoC issuer in mutual recognition. The ability to source qualified seafarers with the requisite prior experience on specific vessel types and specific additional certifications has generally proven to be challenging on the industrial side. However, even with the right credentials, seafarers have cited a lack of “soft skills” such as leadership, language fluency, cultural awareness, and religious tolerance as an extra challenge to overcome.
- **Economic barriers:** Various barriers to labor mobility have been identified that discourage economies from employing seafarers of other nationalities. These notably include supply and demand balance in the domestic seafaring workforce, policies and legislation, the protection of domestic seafarers, commitments to domestic seafarers, and language, welfare, and regulatory discrepancies between foreign and domestic seafarers. The following major strategies are used by economies to overcome the identified obstacles: improving laws, policies, and enforcement to create a better environment for cross-border mobility; protecting seafarers’ health and safety to safeguard working conditions and welfare; cooperation among member economies, such as for mutual CoC certification; and granting visas to seafarers to promote physical mobility and protect workers’ rights.

In response to the question on the collaborative actions that might be taken under the APEC umbrella to maximize the cross-border labor mobility of seafarers, the following recommendations are made:

- First and foremost, mutual agreement must be reached between member economies on their CoCs or licenses. This barrier cannot be overcome solely through the ability of individual seafarers or by securing a higher level of education and training; rather, it can only be tackled through collaboration between member economies. As supported by the Blue Economy and aligned with the Innovative Development, Economic Reform and Growth Fund, which was clearly identified in APEC Economic Leaders

Meeting (AELM) Annex C of the 2014 Leaders' Declaration, the promotion of practical cooperation, capacity building, policy dialogue, and experience sharing in the area of seafarers' labor mobility, focusing specifically on accelerating the mutual recognition of CoCs between member economies, must be urged;

- A career development support system that incorporates a variety of information on job opportunities in the wider maritime sector, both offshore and onshore, must be established in the long run to promote ship-to-shore labor mobility. As identified, a number of the barriers hindering the mobility of seafarers across regions are closely linked to a lack of reliable and accessible information on the seafarers' career paths. There is a also strong need to expand the range of information to include work opportunities in the broader maritime sector, where seafarers' skills and experiences gained at sea can be acknowledged and appreciated. For this seafarers must fully understand the potential work opportunities and career demands onshore before moving their career from ship to shore, especially in today's fast-paced and competitive business environment. This understanding would enable seafarers to set clear goals along their professional paths while considering various possible constraints and further provide them with opportunities to learn ahead of time about the transferable qualifications or skills that would be required onshore. By preparing in this manner, seafarers will gain the possibility of broader career options and the ability to properly attain the qualifications required to develop a solid career plan for the long term;
- In addition, a more integrated, sustainable, inclusive, and mutually favorable partnership through seafarer-related organizations across the Asia-Pacific region is essential for seafarers' capacity and onboard experience building to meet the requirements of the international shipping industry. These organizations may include, but are not limited to, maritime administrations, shipping companies, private crewing management companies, and academic institutions;
- The required skills for seafarers can be divided into three categories: hard skills based on CoCs, soft skills, and digital skills of the future. Specifically, in addition to the

STCW-based hard skills, the direction of future MET must be adjusted to emphasize the development of these soft skills, which can be applied when interacting with multilingual, multicultural, and multigenerational members of crew, given the present nature of the global maritime business. Furthermore, taking into account emerging global technology trends toward digitalization, it is expected that the shipping industry's adoption of advancements in digital and autonomous technology will have a significant impact on seafarers' employment onboard, which will significantly supplement existing labor and create new jobs to meet the demands of the new era. Increased digitalization and automation have also accelerated the use of digital technology and remote services in a variety of shipping domains, including pilotage, surveying, crew training, and official examinations. In response to this trend, seafarer retraining in line with the digital and automated evolution of the maritime industry should be planned in terms of job transitions in the future;

- A concerted effort should be made to implement a distance-learning system across the APEC region. In light of the impacts of the COVID-19 pandemic during the preceding years, when face-to-face MET was severely constrained, there is no choice but to develop high-quality online job training platforms and programs in the years to come. For this, training materials need to be designed through close collaboration that incorporates the expertise and experiences (both hard technical skills and soft skills) of all member economies to maximize efficiency and mutual benefit;
- The creation of a favorable environment for cross-labor mobility, which includes fairer financial rewards and satisfactory welfare conditions in conjunction with the implementation of MLC, should be a top priority in light of how the top-listed barriers are closely related to domestic policy measures;
- Given that seafarers' policies and regulations take into account a wide range of organizational, regulatory, infrastructural, and personal circumstances from the perspectives of seafarers, industries, and economies, their concerns should be carefully addressed through the establishment of common ground among all stakeholders;

- Given the multitude of forms and degrees of complexity that a single barrier element may take, extensive follow-up investigations on individual barrier elements would be required.

In response to the final question considering the effects of COVID-19 on the labor mobility of seafarers, the following conclusions and recommendations can be drawn:

- The global pandemic shed new light on the vital role of seafarers in global trade, economic growth, and maritime logistics. However, the impact of COVID-19 on seafarers' human rights, employment, and work-life onboard has also generated concerns about the long-term viability of the shipping labor market in the pandemic age;
- To cope with this crisis, international organizations, governments, agencies, non-profit organizations, and private organizations have all worked together to strengthen the resilience of seafarers in the face of the pandemic. Depending on their nature and the stakeholders they represent, each entity has raised its voice to swiftly address issues raised by the pandemic. While each institution may present its message differently, the topics revolve around the same issues, including “repatriation,” “medical access,” “vaccination,” and “certification”;
- To better deal with these issues, continuous efforts have recently been made to designate seafarers as key workers to create a more solid basis for each administration to assist individuals, facilitate coordination, and provide solutions to issues that remain unresolved after the last two years. Seafarers will have wider access to vaccinations, be able to safely return home by flight or other means of transportation, be permitted to take shore leave when medical services are required, and no longer be subject to working for extended periods that are contrary to the contract limits set by the MLC;
- As more experience and evidence on COVID-19 is accumulated, administrations will have more space to better adjust their responses. As every economy and organization

is working towards the same goal to end the pandemic, continued cooperation is required based on international guidelines, which, in turn, are based on scientific data.

APPENDIX

Appendix 1) Questionnaire for Seafarers

The Questionnaire

This survey will help in achieving the objective of the research, which is to investigate the barriers and determinants to labor mobility among seafarers in APEC economies in the digital age. It aims to standardize procedures in terms of labor mobility, welfare, wages, knowledge, career development, career progression, training, education, capacity building, contract terms and conditions, travel restrictions, and so on. To achieve sustained benefits and promote seafarers' labor mobility, it will help in setting policies and strategies to eliminate restrictions on seafarers' labor mobility within the APEC economies.

This survey has four sections:

Section A (demographic information): choose only one option:

1. Age

- 20-30
- 31-40
- 41-50
- Above 51

2. Gender

- Male
- Female

3. Nationality

Please specify _____.

4. Employment status

- Employed
- Unemployed

5. How many companies have you joined since you began serving at sea?

- 1-2
- 3-5

- More than 5

6. How long have you been employed at your present company?

- 0-5 years
- 5-10 years
- 10-15 years
- Above 15 years

7. Certificate of competency holding

- Limited
- Unlimited
- Class one
- Class two
- Watchkeeping Certificate

8. Department

- Deck Officer
- Engineer Officer

9. Economy of Issuing the COC

Please specify _____.

10. Current Rank

- Master
- Chief Officer
- 2nd Officer
- 3rd Officer
- 4th Officer
- Chief Engineer
- 2nd Engineer
- 3rd Engineer
- 4th Engineer
- 5th Engineer

11. Experience in type of vessel

- Oil tanker
- Gas vessel
- LNG vessel
- Container vessel
- General cargo
- Bulk carriers
- Passenger vessel
- Car carrier
- Ro-Ro vessels
- Supply vessel/tug
- Cable laying vessel
- Livestock carriers
- Heavy-Lift/Project cargo vessel
- Others
- Specify _____.

12. Total sea time experience including cadet

- 1-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- More than 20 years

13. Are you a member of a union?

- Yes
- No

14. Languages

a. First language

Please specify _____.

b. Second language

Please specify _____.

Section B (5-point Likert Scale Questionnaire)

Please indicate your level of agreement with the listed statement on a scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree)

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

1. The purpose of joining the shipping industry

1	Good pay	1	2	3	4	5
2	Prestigious position	1	2	3	4	5
3	Travel around the world	1	2	3	4	5
4	Family tradition	1	2	3	4	5
5	Get more experience at sea to bridge for shore job	1	2	3	4	5
6	The only available option	1	2	3	4	5
7	Interested in sea-based jobs	1	2	3	4	5
8	Flexibility & long leave periods	1	2	3	4	5

2. Skills needed for seafarers to improve their career development

1	Problem-solving skills	1	2	3	4	5
2	Technical skills	1	2	3	4	5
3	Digital literacy skills	1	2	3	4	5
4	Time management skills	1	2	3	4	5
5	Motivation skills to learn continuously	1	2	3	4	5
6	Effective communication & social skills	1	2	3	4	5
7	Management and leadership skills	1	2	3	4	5

3. Preferred methods of improving knowledge & learning

1	Attending classes at maritime institutes & learning centers	1	2	3	4	5
2	Practical training and workshops	1	2	3	4	5
3	E-learning, online programs, and courses for seafarers while at home, onboard, or traveling	1	2	3	4	5
4	Computer-Based Training (CBT)	1	2	3	4	5

4. To what extent are you satisfied with working with a multinational crew?

1	2	3	4	5
Strongly dissatisfied	Dissatisfied	No opinion	Satisfied	Strongly satisfied

5. To what extent are you willing to join/continue joining foreign shipping companies?

1	2	3	4	5
---	---	---	---	---

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
6. (Individual barriers) What are the main individual barriers that would make you not decide to join foreign shipping companies?						
	1	2	3	4	5	
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
1	Cultural barriers	1	2	3	4	5
2	Compliance of seafarer contract terms and conditions with MLC 2006	1	2	3	4	5
3	Language barriers	1	2	3	4	5
4	Training, experience in ranks and types of vessels	1	2	3	4	5
5	Access to the manning agencies and shipping companies	1	2	3	4	5
6	Traveling restrictions	1	2	3	4	5
7	Qualifications & certifications	1	2	3	4	5
8	Religious barriers	1	2	3	4	5
9	Food served onboard	1	2	3	4	5
10	Gender preferences	1	2	3	4	5
11	Occupational safety	1	2	3	4	5
12	Diversity and discrimination	1	2	3	4	5
13	Internet connectivity & digital services	1	2	3	4	5
14	Organizational culture	1	2	3	4	5
15	Trip length	1	2	3	4	5
16	Salary/wages offered	1	2	3	4	5
17	Difficulty of career progression	1	2	3	4	5
18	Not offering career development	1	2	3	4	5
19	Not offering health insurance	1	2	3	4	5
20	Job security	1	2	3	4	5
21	Not offering a pension plan	1	2	3	4	5
22	Influence of stereotypes	1	2	3	4	5
23	Has not ratified MLC	1	2	3	4	5
24	Non-compliance with ILO – MLC resting hours	1	2	3	4	5
25	Certificate of Recognition (CoR)	1	2	3	4	5
26	Condition/age of vessels	1	2	3	4	5
27	Crew nationalities	1	2	3	4	5
28	Type of vessels in the fleet	1	2	3	4	5
29	Working conditions onboard	1	2	3	4	5
30	Poor welfare services or facilities	1	2	3	4	5
31	Over training requirements by flag state and shipping company	1	2	3	4	5
32	Retentions	1	2	3	4	5

33	Number of vessels in the fleet	1	2	3	4	5
34	Seafarers turnover	1	2	3	4	5

7. To what extent would you agree to join a new type of vessel on a trainee salary until you gained the required experience? (for example, from container vessel experience to gain oil tanker experience)

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

8. To what extent would you agree to join at a lower rank to gain experience in different types of vessels??

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Section C (select the relevant choices for each question; you can select more than one response):

1. Please give your opinion about the role of joining foreign shipping companies in increasing your seafaring experience.

- Effective
- Neutral
- Don't know
- Ineffective

2. Which of the following features would encourage you to join a foreign shipping company (required facilities)?

- Health insurance
- Competitive wages(more money)
- Career development
- Career progression(promotion)
- Better financial employment benefits
- Provision of a pension plan
- Offering a permanent position
- Sharing different experiences
- Offering more facilities onboard
- Better employment benefits

- Better onboard conditions – services
- Onboard welfare
- Retentions
- Types of vessels in the fleet
- Number of vessels in the fleet
- Internet connectivity & digital services
- Short trip length
- Larger crew
- Multinational crew
- Other, please specify _____.

3. What are the most important facilities that would attract you to join a foreign shipping company?

- Electronic services
- Online knowledge center
- Book library (online)
- Offering constant training courses
- Internet connectivity
- Digital services, e.g., social sites, email, e-books, websites

4. Please indicate the most important employment benefits when joining a foreign shipping company.

- Paid leave
- Pension
- Medical insurance for the family
- Paid study leave
- Bonus
- Good welfare facilities
- Offering adequate training
- Permanent employment

5. For what reasons would you expect to *not* be chosen to join foreign shipping companies / manning agencies if you applied?

- Culture

- Religion
- Language
- Nationality
- Age
- Medical Fitness
- Issue place of Certificate of Competency COC
- Certificate of Recognition cannot be obtained
- Experience in type of vessel
- Limited time of experience on certain type of vessel
- Wages and benefits requested
- References obtained from previous shipping companies
- Lack of training requirements by flag state or shipping company beyond STCW requirements
- Others, please specify _____.

6. In your opinion, what are the most required welfare services at sea? (you can select more than one option)

- Adequate shore leave
- Availability of welfare facilities in ports
- Decent accommodation
- Recreational facilities to encourage social life
- Electronic equipment (computer, tablet, DVD etc.)
- Book library
- Crew recreation room
- Medical care
- Paid internet and communication services
- Entertainment activities (equipment to watch films)
- Cultural and educational activities
- Safety and health services
- Better living conditions
- Sport facilities and equipment
- Electronic services to access social sites & email
- Fatigue prevention by setting specific working hours / “well-being”

7. If you have joined a foreign shipping company, how did you find the experience?

- Pleasant
- Normal
- Unpleasant
- Would like to try it again
- Other, please specify _____.

8. Have you ever not been selected for a foreign shipping company due to a lack of training requirements by the flag state or shipping company?

- Yes
- No

9. Could you please mention some of the training requirements by the flag state and shipping company beyond STCW training certificates?

10. Would you still recommend working with foreign shipping companies?

- Yes
- No

Section D (please give suggestions regarding the following statement):

1. Suggestions to improve joining foreign shipping companies among seafarers.

Appendix 2) List of Seafarers for Questionnaire Survey (APEC and Non-APEC region)

N.	Nationality	Economy of Issuing COC	Department	Current Rank	Gender	Employment status	First language
1	American	United States	Deck	3rd officer	Male	Employed	English
2	Chinese	China	Deck	3rd officer	Male	Employed	Chinese
3	Chinese	China	Engine	5th officer	Male	Employed	Chinese
4	Chinese	China	Deck	4th officer	Female	Employed	Chinese
5	Chinese	China	Deck	3rd officer	Male	Employed	Chinese
6	Filipino	Egypt	Deck	2nd officer	Male	Employed	English
7	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
8	Filipino	The Philippines	Engine	4th officer	Male	Employed	Tagalog
9	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
10	Filipino	The Philippines	Engine	Chief officer	Male	Employed	Tagalog
11	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
12	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
13	Filipino	The Philippines	Deck	Master	Male	Employed	English
14	Filipino	The Philippines	Deck	4th officer	Male	Employed	English
15	Filipino	The Philippines	Deck	4th officer	Male	Employed	Heligaynon
16	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
17	Filipino	The Philippines	Deck	2nd officer	Male	Employed	Tagalog
18	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
19	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
20	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
21	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
22	Filipino	The Philippines	Deck	2nd officer	Male	Employed	Tagalog
23	Filipino	The Philippines	Engine	5th officer	Male	Employed	Tagalog
24	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
25	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
26	Filipino	The Philippines	Engine	3rd officer	Male	Employed	Tagalog
27	Filipino	The Philippines	Engine	3rd officer	Male	Employed	Tagalog
28	Filipino	The Philippines	Engine	4th officer	Male	Employed	Tagalog
29	Filipino	The Philippines	Engine	5th officer	Male	Employed	English
30	Filipino	The Philippines	Deck	2nd officer	Male	Employed	Tagalog
31	Filipino	The Philippines	Deck	2nd officer	Male	Unemployed	Tagalog
32	Filipino	The Philippines	Engine	5th officer	Male	Employed	English
33	Filipino	The Philippines	Deck	Master	Male	Employed	Tagalog
34	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
35	Filipino	The Philippines	Engine	2nd officer	Male	Employed	Tagalog
36	Filipino	The Philippines	Engine	2nd officer	Male	Employed	Tagalog
37	Filipino	The Philippines	Engine	5th officer	Male	Unemployed	Tagalog

38	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
39	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
40	Filipino	The Philippines	Deck	4th officer	Male	Employed	English
41	Filipino	The Philippines	Engine	2nd officer	Male	Employed	Tagalog
42	Filipino	The Philippines	Engine	3rd officer	Male	Employed	English
43	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
44	Filipino	The Philippines	Deck	Chief officer	Male	Employed	Bisaya
45	Filipino	The Philippines	Deck	4th officer	Male	Employed	Tagalog
46	Filipino	The Philippines	Deck	4th officer	Male	Employed	Ilonggo
47	Japanese	Japan	Deck	3rd officer	Male	Employed	Japanese
48	Japanese	Japan	Deck	4th officer	Male	Employed	English
49	Japanese	Japan	Deck	Master	Male	Employed	Japanese
50	Korean	Republic of Korea	Deck	Chief officer	Male	Employed	Korean
51	Korean	Republic of Korea	Deck	Chief officer	Male	Employed	Korean
52	Korean	Republic of Korea	Deck	Chief officer	Male	Employed	Korean
53	Korean	Republic of Korea	Engine	Chief officer	Male	Unemployed	Korean
54	Korean	Republic of Korea	Deck	Chief officer	Male	Employed	Korean
55	Korean	Republic of Korea	Deck	2nd officer	Male	Unemployed	Korean
56	Korean	Republic of Korea	Deck	2nd officer	Male	Unemployed	Korean
57	Korean	Republic of Korea	Deck	2nd officer	Male	Employed	Korean
58	Korean	Republic of Korea	Deck	2nd officer	Male	Employed	Korean
59	Korean	Republic of Korea	Deck	Chief officer	Male	Employed	Korean
60	Malaysian	Singapore	Engine	3rd officer	Male	Employed	Malay
61	Papua New Guinean	The Philippines	Deck	Master	Male	Employed	English
62	Russian	Russia	Engine	Chief officer	Male	Unemployed	Russian
63	Russian	Russia	Engine	2nd officer	Male	Employed	Russian
64	Russian	Russia	Deck	Master	Male	Employed	Russian
65	Russian	Russia	Engine	5th officer	Male	Employed	Russian
66	Singaporean	Hong Kong, China	Deck	2nd officer	Male	Unemployed	Chinese
67	Singaporean	Singapore	Engine	4th officer	Male	Employed	Chinese
68	Vietnamese	Viet Nam	Deck	3rd officer	Male	Employed	Viet Nam
69	Vietnamese	Viet Nam	Deck	4th officer	Male	Employed	English
70	Vietnamese	Viet Nam	Engine	4th officer	Male	Employed	Vietnamese
71	Argentina	Argentina	Engine	Chief officer	Male	Employed	Espanyol
72	Bangladesh	India	Engine	5th officer	Male	Employed	Hendi
73	Burmese	Malaysia	Engine	3rd officer	Male	Unemployed	English
74	Croatian	Croatia	Deck	2nd officer	Male	Employed	Croatian

75	Danish	Denmark	Engine	4th officer	Male	Employed	Danish
76	Egyptian	Egypt	Engine	3rd officer	Male	Employed	Arabic
77	Egyptian	Egypt	Engine	2nd officer	Male	Employed	Arabic
78	Egyptian	Egypt	Deck	3rd officer	Male	Employed	Arabic
79	Egyptian	Egypt	Engine	2nd officer	Male	Employed	Arabic
80	Egyptian	Egypt	Deck	Chief officer	Male	Unemployed	Arabic
81	Egyptian	Egypt	Engine	4th officer	Male	Employed	Arabic
82	Egyptian	Egypt	Engine	4th officer	Male	Unemployed	Arabic
83	Egyptian	Egypt	Engine	4th officer	Male	Unemployed	Arabic
84	Egyptian	Egypt	Deck	4th officer	Male	Unemployed	Arabic
85	Indian	India	Deck	Master	Male	Employed	English
86	Indian	India	Deck	2nd officer	Male	Employed	Hendi
87	Indian	India	Deck	Chief officer	Female	Unemployed	Hendi
88	Indian	India	Deck	2nd officer	Male	Employed	English
89	Indian	India	Deck	3rd officer	Male	Employed	English
90	Iranian	Iran	Engine	4th officer	Male	Unemployed	Arabic
91	Iraqi	Egypt	Engine	4th officer	Male	Unemployed	Arabic
92	Jordanian	Jordan	Engine	4th officer	Male	Employed	Arabic
93	Jordanian	Jordan	Engine	2nd officer	Male	Employed	Arabic
94	Kuwait	United Kingdom	Deck	Master	Male	Employed	English
95	Kuwait	United Kingdom	Deck	Master	Male	Employed	Arabic
96	Kuwait	United Kingdom	Deck	Master	Male	Employed	Arabic
97	Lebanese	Lebanon	Deck	2nd officer	Male	Employed	Arabic
98	Pakistani	Canada	Deck	Master	Male	Employed	Urdu
99	Pakistani	Pakistan	Deck	Chief officer	Male	Employed	English
100	Pakistani	Singapore	Engine	2nd officer	Male	Employed	Urdu
101	Polish	Poland	Deck	3rd officer	Male	Employed	Polish
102	Polish	Poland	Deck	3rd officer	Male	Employed	Polish
103	Polish	Poland	Deck	Master	Male	Employed	Polish
104	Polish	Poland	Deck	Master	Male	Employed	Polish
105	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
106	Polish	Poland	Deck	Master	Male	Unemployed	Polish
107	Polish	Poland	Deck	Master	Male	Employed	Polish
108	Polish	Poland	Deck	Chief officer	Male	Employed	English
109	Polish	Poland	Deck	Master	Male	Employed	Polish
110	Polish	Poland	Engine	2nd officer	Male	Employed	Polish
111	Polish	Poland	Engine	2nd officer	Male	Employed	Polish
112	Polish	Poland	Deck	2nd officer	Male	Employed	Polish
113	Polish	Poland	Engine	3rd officer	Male	Employed	Polish
114	Polish	Poland	Engine	5th officer	Male	Employed	Polish

115	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
116	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
117	Polish	Poland	Engine	2nd officer	Male	Employed	Polish
118	Polish	Poland	Deck	Master	Male	Employed	Polish
119	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
120	Polish	Poland	Engine	3rd officer	Male	Employed	Polish
121	Polish	Poland	Deck	3rd officer	Male	Employed	Polish
122	Polish	Poland	Engine	Chief officer	Male	Employed	Polish
123	Polish	Poland	Deck	Master	Male	Employed	Polish
124	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
125	Polish	Poland	Deck	Chief officer	Male	Employed	Polish
126	Polish	Poland	Deck	2nd officer	Male	Unemployed	English
127	Polish	Poland	Deck	2nd officer	Male	Unemployed	English
128	Portuguese	Portugal	Deck	4th officer	Male	Employed	Portuguese
129	Portuguese	Portugal	Engine	2nd officer	Male	Employed	Portuguese
130	Romanian	Poland	Deck	4th officer	Male	Employed	Romania
131	Romanian	Romania	Deck	Master	Male	Employed	English
132	Romanian	Romania	Engine	5th officer	Male	Employed	Romania
133	Sri Lankan	Sri Lanka	Engine	3rd officer	Male	Unemployed	Sri Lankan
134	Syrian	Egypt	Deck	Master	Male	Employed	Arabic
135	Syrian	Egypt	Deck	2nd officer	Male	Employed	Arabic
136	Syrian	Egypt	Deck	Master	Male	Employed	Arabic
137	Syrian	Jordan	Deck	2nd officer	Male	Employed	Arabic
138	Syrian	The Philippines	Deck	2nd officer	Male	Employed	Arabic
139	Syrian	Egypt	Engine	4th officer	Male	Unemployed	Arabic
140	Turkish	Turkey	Deck	3rd officer	Male	Employed	Turkish
141	Ukrainian	Russia	Deck	3rd officer	Male	Employed	Russian
142	Ukrainian	Ukraine	Engine	Chief officer	Male	Employed	Russian
143	Yemeni	Egypt	Deck	3rd officer	Male	Unemployed	Arabic

The Questionnaire for Shipping Companies & Crewing Agencies

This survey will help in achieving the objective of the research, which is to investigate labor mobility barriers and determinants among seafarers in APEC economies in the digital age. It aims to standardize the procedures in terms of labor mobility, wages, knowledge, career development, career progression, training, education, contract terms and conditions, travel restrictions, and so on. It will help to achieve sustained benefits and set policies and strategies to enhance seafarers' labor mobility within APEC economies. The survey has four sections:

Section A (company information): choose only one response:

1. Under which category is your company?

- Shipping company
- Manning agency
- Ship management
- Crew administration agency
- Other
- Please specify _____.

2. Do you belong to any of the APEC-SEN member economies (Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; the United States of America; and Viet Nam)?

- Yes
- No
- If other, please specify _____.

3. Where is your Headquarters?

Please specify _____.

4. Do you have offices in other economies?

- Yes
- No
- Please specify _____.

5. How many officers are there in your pool?

- 0-250 officers
- 250-500 officers
- 500-750 officers
- 750-1000 officers
- More than 1000 officers

6. Do you offer employment opportunities for officers from another region?

- Yes
- No

7. Do you recruit multinational officers?

- Yes
- No
- Sometimes

8. Do you employ officers from a specific region?

- Yes
- No
- Please specify _____.

9. Do you employ officers from specific CoC issuers?

- Yes
- No
- Please specify the economies _____.

10. What is the total number of vessels you operate?

- 1-10 vessels
- 10-20 vessels
- 20-30 vessels
- 30-40 vessels
- More than 40 vessels

11. What type of shipping vessels do you have in your fleet?

- Oil tanker
- Gas vessel
- LNG vessel
- Container vessel
- General cargo

- Bulk carriers
- Passenger vessel
- Car carrier
- Ro-Ro vessels
- Supply vessel/tug
- Cable laying vessel
- Livestock carriers
- Heavy-lift/project cargo vessels
- Others
- Specify _____.

12. Total experience in the shipping industry

- 1-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- More than 20 years

13. Do you have any agreements with crewing unions?

- Yes
- No

14. Are you certified MLC 2006?

- Yes
- No

15. If you are not certified MLC 2006, do you comply with MLC 2006?

- Yes
- No

16. What type of employment contracts do you offer?

- Temporary contract
- Permanent contract
- Both

Section B (multiple-choice questions) – select the relevant choices for each question; you

can select more than one option):

1. Which of the following features (facilities) do you offer to attract more foreign officers?

- Health insurance
- Competitive wages
- Career development at sea
- Career progression
- Better financial employment benefits (pension)
- A permanent position
- Sharing different experiences
- More facilities onboard
- Better employment benefits
 - Short trip length
 - Larger crew
 - Good living conditions onboard
 - Digital services
 - Family insurance
 - Paid leave
 - Sponsoring training courses
 - Internet access 24/7
 - Gym/swimming pool
 - Entertainment activities
 - Academic activities

2. What are the expected reasons for not employing foreign officers if they have applied?

- Culture
- Religion
- Language
- Nationality
- Age
- Medical Fitness
- Issue place of Certificate of Competency COC

- Certificate of Recognition cannot be obtained.
- Experience of type of vessel
- Limited time of experience on certain type of vessel
- Wages and benefits requested
- References obtained from previous shipping companies
- Others, please specify _____.

3. What are the reasons for employing foreign officers from different regions?

- Share new knowledge
- Create a diverse workplace
- Bring new skills
- Inspire creativity onboard the vessels
- Learn new ways to expand business in other economies
- Lower wages than local officers

4. What skills would you like to improve for your employees/seafarers?

- Problem-solving skills
- Technical skills
- Digital literacy skills
- Time management skills
- Motivation skills to learn continuously
- Effective communication & social skills
- Management and leadership skills

5. What methods do you apply to improve seafarers' capacity building?

- Attending classes at maritime institutes & learning centers
- Practical training and workshops
- E-learning, online programs, and courses for seafarers while at home, onboard, or traveling
- Computer-Based Training (CBT)
- English language courses
- Others, please specify _____.

Section C (five-point Likert scale) Please indicate your level of agreement with the listed

statements on a scale of 1 to 5 (1 = strongly disagree/dissatisfied and 5 = strongly agree/satisfied)

1. How satisfied were you with employing multinational crew?

1	2	3	4	5
Strongly dissatisfied	Dissatisfied	No opinion	Satisfied	Strongly satisfied

2. How strongly do you agree with employing foreign seafarers?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

3. How strongly do you agree with the following industrial barriers that affect labor mobility among seafarers and make you not interested in employing seafarers from other nationalities?

1	Organizational structure	1	2	3	4	5
2	Seafarers' contract terms and conditions, monitoring implementation and correct application of ILO, MLC 2006	1	2	3	4	5
3	Language barriers	1	2	3	4	5
4	Training, experience in ranks and types of vessels	1	2	3	4	5
5	Preferences in CoC issuers and reasons	1	2	3	4	5
6	Experience in type of vessels	1	2	3	4	5
7	Recruitment requirements (qualifications & certifications)	1	2	3	4	5
8	Research the major shipping companies and approved/certified manning agencies	1	2	3	4	5
9	Approved/certified manning agencies	1	2	3	4	5
10	Offers, wages and welfare provided	1	2	3	4	5
11	Company regulations & policies	1	2	3	4	5
12	Nationality restrictions in term of issuing visa and traveling	1	2	3	4	5
13	Security risks	1	2	3	4	5
14	Rising costs	1	2	3	4	5
15	Shipping industry competitiveness	1	2	3	4	5
16	Shortage of qualified workers in the shipping industry	1	2	3	4	5
17	Rules by operation of private crewing agencies	1	2	3	4	5
18	Crewing and ship management centres issues	1	2	3	4	5
19	Literacy rates issues	1	2	3	4	5
20	Maritime training traditions (basic educational systems in place)	1	2	3	4	5
21	MLC 2006 ratification & registration issues	1	2	3	4	5

Section D (please give suggestions regarding the following statement):

1. Suggestions to improve employing foreign seafarers.



Appendix 4) List of Shipping Companies/Agencies for Questionnaire Survey

N.	Region	Headquarters	Officer Pool	Vessels
1	APEC	China	0-250 officers	1-10 vessels
2	APEC	Hong Kong, China	More than 1000 officers	More than 40 vessels
3	APEC	Malaysia	250-500 officers	20-30 vessels
4	APEC	People's Republic of China	More than 1000 officers	More than 40 vessels
5	APEC	Republic of Korea	0-250 officers	1-10 vessels
6	APEC	Republic of Korea	250-500 officers	10-20 vessels
7	APEC	Singapore	250-500 officers	More than 40 vessels
8	APEC	The Philippines	750-1000 officers	30-40 vessels
9	APEC	The Philippines	500-750 officers	More than 40 vessels
10	APEC	The Philippines	More than 1000 officers	More than 40 vessels
11	APEC	The Philippines	500-750 officers	More than 40 vessels
12	APEC	The Philippines	250-500 officers	10-20 vessels
13	APEC	Viet Nam	250-500 officers	1-10 vessels
14	Non-APEC	United Kingdom	500-750 officers	More than 40 vessels
15	Non-APEC	Arab Emirates	More than 1000 officers	More than 40 vessels
16	Non-APEC	Arab Emirates	More than 1000 officers	More than 40 vessels
17	Non-APEC	Egypt	0-250 officers	1-10 vessels
18	Non-APEC	Egypt	0-250 officers	1-10 vessels
19	Non-APEC	Germany	500-750 officers	More than 40 vessels
20	Non-APEC	India	More than 1000 officers	More than 40 vessels
21	Non-APEC	India	250-500 officers	30-40 vessels
22	Non-APEC	India	500-750 officers	30-40 vessels
23	Non-APEC	India	250-500 officers	20-30 vessels
24	Non-APEC	Kuwait	500-750 officers	30-40 vessels
25	Non-APEC	Oman	More than 1000 officers	More than 40 vessels
26	Non-APEC	Poland	0-250 officers	1-10 vessels
27	Non-APEC	Poland	0-250 officers	1-10 vessels
28	Non-APEC	Poland	0-250 officers	1-10 vessels
29	Non-APEC	United Kingdom	0-250 officers	20-30 vessels

Appendix 5) Questionnaire for APEC Member Economies

The Questionnaire for Maritime Administrations

This survey will help in achieving the objective of the research, which is to investigate labor mobility barriers and determinants among seafarers in APEC economies in the digital age. It aims to standardize the procedures in terms of labor mobility, wages, knowledge, career development, career progression, training, education, contract terms and conditions, travel restrictions, and so on. It will help to achieve sustained benefits and set policies and strategies to enhance seafarers' labor mobility within APEC economies. The survey has four sections:

Section A (economy information): choose only one option:

1. Name of your economy:

Please specify:

2. Number of organizations responsible for shipping industry:

- 1-2
- 2-4
- 4-6

3. How likely are you to encourage the employment of foreign seafarers onboard your flag state vessels?

- Certain to employ
- Most likely to employ
- Don't know
- Most unlikely to employ
- I won't employ

4. Are you one of the APEC economies (Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; the United States of America; and Viet Nam)?

- Yes
- No
- If other, please specify _____.

5. Do your economy's requirements corresponded with MLC 2006?

- Yes

No

6. Do you comply with MLC 2006?

Yes

No

7. Do you require over-standards to employ foreign seafarers?

Yes

No

Sometimes

8. Do you have Sustainable Development Goals (SDG) to improve seafarers' working conditions?

Yes

No

Section B (multiple-choice questions) -- select the relevant options for each question:

9. What are the barriers to implementing innovations and capacity-building initiatives in the shipping industry in your economy?

	Answers	No	Yes
9a	Unwillingness to take risks		
9b	Resistance to change by manning agencies and seafarers		
9c	Organizational problems		
9d	Political problems		
9e	Financial problems		
9f	Technological barriers		
9g	Other		

10. What are the tools for implementing innovations and capacity-building initiatives in the shipping industry in your economy?

	Answers	No	Yes
10a	Development of new sets of organizational forms resistance to change by manning agencies and seafarers		
10b	New governance structures		
10c	Policy approaches		
10d	Financial facilities		
10e	Partnerships and accountability structures		
10f	Opening great opportunities to incorporate new tools an approaches		

Section C (five-point Likert scale) Please indicate your level of agreement with the listed statements on a scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree)

11. How strongly do you agree with employing foreign seafarers?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

12. How strongly do you agree with the following economic barriers that affect labor mobility among seafarers and make you not interested in employing seafarers from other nationalities?

1	Citizenship requirements	1	2	3	4	5
2	Ability to align legislation with the latest updates in maritime organization convention on standards of training, certification, and watchkeeping (STCW) for seafarers and ensure its proper application	1	2	3	4	5
3	Language barriers	1	2	3	4	5
4	Grant visa-free travel restrictions	1	2	3	4	5
5	Preferences for CoC issuers and reasons	1	2	3	4	5
6	Economies that have ratified the MLC	1	2	3	4	5
7	Reliance on local manpower to work at sea	1	2	3	4	5
8	Lack of adequate training	1	2	3	4	5
9	Crewing companies or third-party ship management companies	1	2	3	4	5
10	Competition from foreign shipping companies	1	2	3	4	5
11	Flag state responsibilities	1	2	3	4	5
12	Visa restrictions	1	2	3	4	5
13	Security issues	1	2	3	4	5
14	Union interference	1	2	3	4	5
15	International standards influence domestic laws	1	2	3	4	5
16	Policies and regulations	1	2	3	4	5

13. Which of the following features (facilities) do you offer to facilitate the employment of more foreign officers?

1	Adopting measures by ratifying states (flag state & port state)	1	2	3	4	5
2	Setting domestic and international standards	1	2	3	4	5
3	Facilitating labor-supplying economies' responsibilities	1	2	3	4	5
4	Protecting seafarers' health and safety	1	2	3	4	5
5	Facilitating the transit and transfer of seafarers	1	2	3	4	5
6	Cooperating among member economies	1	2	3	4	5
7	Granting visas for seafarers	1	2	3	4	5
8	Improve laws, policies, and enforcement	1	2	3	4	5
9	Enhance global knowledge on international recruitment practices	1	2	3	4	5
10	Providing cross-border recruitment services / manning agencies	1	2	3	4	5

Section D (please give suggestions regarding the following statement):

1. Suggestions and recommendations to improve the employment of foreign seafarers.

Appendix 6) List of Economies for Questionnaire Survey

	Which economy are you from?	How do you classify your economy?
1	Australia	Demander of ranked seafarers
2	Brunei Darussalam	Demander of ranked seafarers
3	Chile	Supplier of ranked seafarers
4	Chinese Taipei	Demander of ranked seafarers
5	Indonesia	Supplier of ranked seafarers
6	Mexico	Demander of ranked seafarers
7	Peru	Supplier of ranked seafarers
8	Republic of Korea	Supplier of ranked seafarers
9	Thailand	Supplier of ratings
10	The Philippines	Supplier of ranked seafarers

Appendix 7) CoC Mutual Agreement Status of Economies

Australia			
No.	Economy	Status	Remark
1	Belgium	Bilateral	Australia ↔ Belgium
2	Denmark	Bilateral	Australia ↔ Denmark
3	Fiji	Bilateral	Australia ↔ Fiji
4	Finland	Bilateral	Australia ↔ Finland
5	France	Bilateral	Australia ↔ France
6	Germany	Bilateral	Australia ↔ Germany
7	Hong Kong, China	Bilateral	Australia ↔ Hong Kong, China
8	Iran	Bilateral	Australia ↔ Iran
9	Ireland	Bilateral	Australia ↔ Ireland
10	Italy	Bilateral	Australia ↔ Italy
11	Malaysia	Bilateral	Australia ↔ Malaysia
12	Netherlands	Bilateral	Australia ↔ Netherlands
13	New Zealand	Bilateral	Australia ↔ New Zealand
14	Kiribati	Bilateral	Australia ↔ Kiribati
15	Norway	Bilateral	Australia ↔ Norway
16	Pakistan	Bilateral	Australia ↔ Pakistan
17	The Philippines	Bilateral	Australia ↔ The Philippines
18	Romania	Bilateral	Australia ↔ Romania
19	Singapore	Bilateral	Australia ↔ Singapore
20	South Africa	Bilateral	Australia ↔ South Africa
21	United Kingdom	Bilateral	Australia ↔ United Kingdom
22	Canada	Bilateral	Australia ↔ Canada
23	Denmark	Bilateral	Australia ↔ Denmark
24	Greece	Bilateral	Australia ↔ Greece
25	India	Bilateral	Australia ↔ India
26	Papua New Guinea	Bilateral	Australia ↔ Papua New Guinea
27	Sweden	Bilateral	Australia ↔ Sweden
28	Bangladesh	Bilateral	Australia ↔ Bangladesh
29	United States of America	Bilateral	Australia ↔ United States of America

30	Sri Lanka	Bilateral	Australia ↔ Sri Lanka
31	Vanuatu	Unilateral	Australia → Vanuatu
32	Antigua & Barbuda	Unilateral	Australia → Antigua & Barbuda
33	Bahamas	Unilateral	Australia → Bahamas
34	Barbados	Unilateral	Australia → Barbados
35	Belize	Unilateral	Australia → Belize
36	Brunei	Unilateral	Australia → Brunei
37	Bulgaria	Unilateral	Australia → Bulgaria
38	Cyprus	Unilateral	Australia → Cyprus
39	Dominica	Unilateral	Australia → Dominica
40	Georgie	Unilateral	Australia → Georgia
41	Ghana	Unilateral	Australia → Ghana
42	Indonesia	Unilateral	Australia → Indonesia
43	Isle of Man	Unilateral	Australia → Isle of Man
44	Malta	Unilateral	Australia → Malta
45	Liberia	Unilateral	Australia → Liberia
46	Marshall Islands	Unilateral	Australia → Marshall Islands
47	Mauritius	Unilateral	Australia → Mauritius
48	Netherlands Antilles	Unilateral	Australia → Netherlands Antilles
49	Panama	Unilateral	Australia → Panama
50	St Kitts & Nevis	Unilateral	Australia → St Kitts & Nevis
51	St Vincent & the Grenadines	Unilateral	Australia → St Vincent & the Grenadines

Brunei Darussalam

No.	Economy	Status	Remark
1	Australia	Unilateral	Brunei ← Australia
2	Canada	Unilateral	Brunei ← Canada
3	Croatia	Unilateral	Brunei ← Croatia
4	India	Unilateral	Brunei ← India
5	Indonesia	Bilateral	Brunei ↔ Indonesia
6	Ireland	Unilateral	Brunei ← Ireland
7	Malaysia	Bilateral	Brunei ↔ Malaysia
8	New Zealand	Unilateral	Brunei ← New Zealand
9	Pakistan	Unilateral	Brunei ← Pakistan
10	The Philippines	Unilateral	Brunei ← The Philippines
11	Singapore	Unilateral	Brunei ← Singapore
12	United Kingdom	Unilateral	Brunei ← United Kingdom
13	Viet Nam	Bilateral	Brunei ↔ Viet Nam

Canada			
No.	Economy	Status	Remark
1	Australia	Bilateral	Australia ↔ Canada
2	France	Bilateral	France ↔ Canada
3	Norway	Bilateral	Norway ↔ Canada

Chinese Taipei			
No.	Economy	Status	Remark
1	Marshall Islands	Unilateral	Chinese Taipei → Marshall Islands
2	Panama	Unilateral	Chinese Taipei → Panama
3	Liberia	Unilateral	Chinese Taipei → Liberia
4	Tuvalu	Unilateral	Chinese Taipei → Tuvalu

Chile			
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No.	Economy	Status	Remark
1	Barbados	Unilateral	Chile → Barbados
2	Vanuatu	Unilateral	Chile → Vanuatu
3	Marshall Islands	Unilateral	Chile → Marshall Islands
4	Bahamas	Unilateral	Chile → Bahamas
5	Cyprus	Unilateral	Chile → Cyprus
6	Liberia	Unilateral	Chile → Liberia
7	Panamá	Unilateral	Chile → Panamá
8	Belize	Unilateral	Chile → Belize
9	Spain	Unilateral	Chile → Spain
10	Dominica	Unilateral	Chile - Dominica
11	Singapore	Unilateral	Chile → Singapore
12	Norway	Unilateral	Chile → Norway
13	Antigua y Barbuda	Unilateral	Chile → Antigua y Barbuda

Hong Kong, China			
No.	Economy	Status	Remark
1	Argentina	Unilateral	Hong Kong, China ← Argentina
2	Australia	Bilateral	Hong Kong, China ↔ Australia
3	Bahamas	Unilateral	Hong Kong, China → Bahamas
4	Bangladesh	Bilateral	Hong Kong, China ↔ Bangladesh
5	Barbados	Unilateral	Hong Kong, China → Barbados
6	Belgium	Bilateral	Hong Kong, China ↔ Belgium
7	Belize	Unilateral	Hong Kong, China → Belize
8	Brazil	Bilateral	Hong Kong, China ↔ Brazil
9	Bulgaria	Bilateral	Hong Kong, China ↔ Bulgaria
10	Canada	Unilateral	Hong Kong, China - Canada
11	People's Republic of China	Unilateral	Hong Kong, China ← People's Republic of China
12	Croatia	Bilateral	Hong Kong, China ↔ Croatia
13	Cyprus	Bilateral	Hong Kong, China ↔ Cyprus
14	Czech Republic	Bilateral	Hong Kong, China ↔ Czech Republic
15	Denmark	Unilateral	Hong Kong, China ← Denmark
16	Dominica	Bilateral	Hong Kong, China ↔ Dominica
17	Egypt	Bilateral	Hong Kong, China ↔ Egypt
18	Estonia	Bilateral	Hong Kong, China ↔ Estonia
19	Ethiopia	Unilateral	Hong Kong, China ← Ethiopia
20	Fiji	Bilateral	Hong Kong, China ↔ Fiji
21	Finland	Unilateral	Hong Kong, China ← Finland

22	France	Bilateral	Hong Kong, China ↔ France
23	Georgia	Bilateral	Hong Kong, China ↔ Georgia
24	Germany	Unilateral	Hong Kong, China ← Germany
25	Ghana	Bilateral	Hong Kong, China ↔ Ghana
26	Greece	Unilateral	Hong Kong, China ← Greece
27	Iceland	Unilateral	Hong Kong, China ← Iceland
28	India	Unilateral	Hong Kong, China ← India
29	Indonesia	Bilateral	Hong Kong, China ↔ Indonesia
30	Iran	Bilateral	Hong Kong, China ↔ Iran
31	Ireland	Bilateral	Hong Kong, China ↔ Ireland
32	Isle of Man	Unilateral	Hong Kong, China → Isle of Man
33	Jamaica	Bilateral	Hong Kong, China ↔ Jamaica
34	Korea	Bilateral	Hong Kong, China ↔ Korea
35	Latvia	Bilateral	Hong Kong, China ↔ Latvia
36	Liberia	Bilateral	Hong Kong, China ↔ Liberia
37	Lithuania	Unilateral	Hong Kong, China ← Lithuania
38	Luxembourg	Unilateral	Hong Kong, China → Luxembourg
39	Malaysia	Bilateral	Hong Kong, China ↔ Malaysia
40	Malta	Bilateral	Hong Kong, China ↔ Malta
41	Marshall Islands	Bilateral	Hong Kong, China ↔ Marshall Islands
42	Montenegro	Bilateral	Hong Kong, China ↔ Montenegro
43	Myanmar	Bilateral	Hong Kong, China ↔ Myanmar
44	Netherlands	Bilateral	Hong Kong, China ↔ Netherlands
45	Netherlands Antilles	Unilateral	Hong Kong, China → Netherlands Antilles
46	New Zealand	Bilateral	Hong Kong, China ↔ New Zealand
47	Norway	Unilateral	Hong Kong, China ← Norway
48	Pakistan	Bilateral	Hong Kong, China ↔ Pakistan
49	Panama	Bilateral	Hong Kong, China ↔ Panama
50	Papua New Guinea	Bilateral	Hong Kong, China ↔ Papua New Guinea
51	The Philippines	Unilateral	Hong Kong, China ← The Philippines
52	Poland	Bilateral	Hong Kong, China ↔ Poland
53	Portugal	Bilateral	Hong Kong, China ↔ Portugal
54	Romania	Bilateral	Hong Kong, China ↔ Romania
55	Russian Federation	Unilateral	Hong Kong, China ← Russian Federation
56	Serbia	Bilateral	Hong Kong, China ↔ Serbia
57	Singapore	Bilateral	Hong Kong, China ↔ Singapore
58	Slovenia	Bilateral	Hong Kong, China ↔ Slovenia

59	Solomon Islands	Bilateral	Hong Kong, China ↔ Solomon Islands
60	South Africa	Bilateral	Hong Kong, China ↔ South Africa
61	Spain	Unilateral	Hong Kong, China ← Spain
62	Sri Lanka	Bilateral	Hong Kong, China ↔ Sri Lanka
63	St. Vincent & the Grenadines	Unilateral	Hong Kong, China → St. Vincent & the Grenadines
64	Sweden	Unilateral	Hong Kong, China ← Sweden
65	Thailand	Bilateral	Hong Kong, China ↔ Thailand
66	Ukraine	Unilateral	Hong Kong, China ← Ukraine
67	United Kingdom	Bilateral	Hong Kong, China ↔ United Kingdom
68	Vanuatu	Unilateral	Hong Kong, China → Vanuatu
69	Viet Nam	Bilateral	Hong Kong, China ↔ Viet Nam

Japan			
No.	Economy	Status	Remark
1	The Philippines	Unilateral	Japan ← The Philippines
2	Turkey	Unilateral	Japan ← Turkey
3	Viet Nam	Unilateral	Japan ← Viet Nam
4	Indonesia	Unilateral	Japan ← Indonesia
5	India	Unilateral	Japan ← India
6	Malaysia	Bilateral	Japan ↔ Malaysia
7	Croatia	Unilateral	Japan ← Croatia
8	Romania	Unilateral	Japan ← Romania
9	Bulgaria	Unilateral	Japan ← Bulgaria
10	Myanmar	Unilateral	Japan ← Myanmar
11	Sri Lanka	Unilateral	Japan ← Sri Lanka
12	Montenegro	Unilateral	Japan ← Montenegro
13	Bangladesh	Unilateral	Japan ← Bangladesh
14	Republic of Korea	Bilateral	Japan ↔ Republic of Korea
15	United Kingdom	Unilateral	Japan ← United Kingdom
16	Pakistan	Unilateral	Japan ← Pakistan
17	Russian Federation	Bilateral	Japan ↔ Russian Federation
18	Poland	Unilateral	Japan ← Poland
19	Vanuatu	Unilateral	Japan → Vanuatu
20	Singapore	Unilateral	Japan → Singapore
21	Panama	Unilateral	Japan → Panama
22	Bahamas	Unilateral	Japan → Bahamas

23	Malta	Unilateral	Japan → Malta
24	Liberia	Unilateral	Japan → Liberia
25	Marshall Islands	Unilateral	Japan → Marshall Islands
26	Cyprus	Unilateral	Japan → Cyprus
27	Tuvalu	Unilateral	Japan → Tuvalu
28	Saint Vincent and the Grenadines	Unilateral	Japan → Saint Vincent and the Grenadines
29	Mongolia	Unilateral	Japan → Mongolia
30	Kiribati	Unilateral	Japan → Kiribati

Malaysia			
No.	Economy	Status	Remark
1	Egypt	Bilateral	Malaysia ↔ Egypt
2	Australia	Bilateral	Malaysia ↔ Australia
3	Bangladesh	Bilateral	Malaysia ↔ Bangladesh
4	Belgium	Bilateral	Malaysia ↔ Belgium
5	Belize	Bilateral	Malaysia ↔ Belize
6	Brazil	Bilateral	Malaysia ↔ Brazil
7	Brunei	Bilateral	Malaysia ↔ Brunei
8	People's Republic of China	Bilateral	Malaysia ↔ Republic of People's Republic of China
9	Croatia	Bilateral	Malaysia ↔ Croatia
10	Finland	Bilateral	Malaysia ↔ Finland
11	Germany	Bilateral	Malaysia ↔ Germany
12	Ghana	Bilateral	Malaysia ↔ Ghana
13	Honduras	Bilateral	Malaysia ↔ Honduras
14	Hong Kong, China	Bilateral	Malaysia ↔ Hong Kong, China
15	India	Bilateral	Malaysia ↔ India
16	Indonesia	Bilateral	Malaysia ↔ Indonesia
17	Ireland	Bilateral	Malaysia ↔ Ireland
18	Japan	Bilateral	Malaysia ↔ Japan
19	Latvia	Bilateral	Malaysia ↔ Latvia
20	Liberia	Bilateral	Malaysia ↔ Liberia
21	Luxembourg	Bilateral	Malaysia ↔ Luxembourg
22	Maldives	Bilateral	Malaysia ↔ Maldives
23	Myanmar	Bilateral	Malaysia ↔ Myanmar
24	New Zealand	Bilateral	Malaysia ↔ New Zealand
25	Norway	Bilateral	Malaysia ↔ Norway

26	Pakistan	Bilateral	Malaysia ↔ Pakistan
27	Papua New Guinea	Bilateral	Malaysia ↔ Papua New Guinea
28	Poland	Bilateral	Malaysia ↔ Poland
29	Panama	Bilateral	Malaysia ↔ Panama
30	Republic of Cyprus	Bilateral	Malaysia ↔ Republic of Cyprus
31	The Philippines	Bilateral	Malaysia ↔ The Philippines
32	Republic of Korea	Bilateral	Malaysia ↔ Republic of Korea
33	Russian Federation	Bilateral	Malaysia ↔ Panama
34	Romania	Bilateral	Malaysia ↔ Romania
35	St. Vincent and the Grenadines	Bilateral	Malaysia ↔ St. Vincent and the Grenadines
36	Singapore	Bilateral	Malaysia ↔ Singapore
37	South Africa	Bilateral	Malaysia ↔ South of Africa
38	Sri Lanka	Bilateral	Malaysia ↔ Sri Lanka
39	Thailand	Bilateral	Malaysia ↔ Panama
40	Ukraine	Bilateral	Malaysia ↔ Ukraine
41	United Kingdom	Bilateral	Malaysia ↔ United Kingdom
42	Vanuatu	Bilateral	Malaysia ↔ Vanuatu
43	Viet Nam	Bilateral	Malaysia ↔ Viet Nam

Mexico			
No.	Economy	Status	Remark
1	Singapore	Bilateral	Mexico ↔ Singapore
2	Barbados	Unilateral	Mexico
3	Cyprus	Unilateral	Mexico
4	Spain	Bilateral	Mexico ↔ Spain
5	Indonesia	Unilateral	Mexico
6	Isle of Man	Unilateral	Mexico
7	Marshall Island	Unilateral	Mexico
8	Panama	Bilateral	Mexico ↔ Panama
9	Vanuatu	Unilateral	Mexico
10	Belgium	Unilateral	Mexico
11	Luxenbug	Unilateral	Mexico

People's Republic of China

No.	Economy	Status	Remark
1	Denmark	Bilateral	People's Republic of China ↔ Denmark
2	Malaysia	Bilateral	People's Republic of China ↔ Malaysia
3	Republic of Korea	Bilateral	People's Republic of China ↔ Republic of Korea
4	Singapore	Bilateral	People's Republic of China ↔ Singapore
5	United Kingdom of Great Britain and Northern Ireland	Bilateral	People's Republic of China ↔ United Kingdom of Great Britain and Northern Ireland
6	Jordan	Bilateral	People's Republic of China ↔ Jordan
7	The Kingdom of Thailand	Bilateral	People's Republic of China ↔ The Kingdom of Thailand
8	Italy	Bilateral	People's Republic of China ↔ Italy
9	Antigua and Barbuda	Unilateral	People's Republic of China → Antigua and Barbuda
10	Bahamas	Unilateral	People's Republic of China → Bahamas
11	Belize	Unilateral	People's Republic of China → Belize
12	Cyprus	Unilateral	People's Republic of China → Cyprus
13	Dominica	Unilateral	People's Republic of China → Dominica
14	Greece	Unilateral	People's Republic of China → Greece
15	Indonesia	Unilateral	People's Republic of China → Indonesia
16	Islamic Republic of Iran	Unilateral	People's Republic of China → Islamic Republic of Iran
17	Jamaica	Unilateral	People's Republic of China → Jamaica
18	Liberia	Unilateral	People's Republic of China → Liberia
19	Malta	Unilateral	People's Republic of China → Malta
20	Netherlands	Unilateral	People's Republic of China → Netherlands
21	Norway	Unilateral	People's Republic of China → Norway
22	Panama	Unilateral	People's Republic of China → Panama
23	Saint Kitts and Nevis	Unilateral	People's Republic of China → Saint Kitts and Nevis
24	Saint Vincent and the Grenadines	Unilateral	People's Republic of China → Saint Vincent and the Grenadines
25	Vanuatu	Unilateral	People's Republic of China → Vanuatu
26	Luxembourg	Unilateral	People's Republic of China → Luxembourg
27	Hong Kong, China	Unilateral	People's Republic of China → Hong Kong, China

Republic of Korea

No.	Economy	Status	Remark
1	Marshall Islands	Unilateral	Republic of Korea
2	Liberia	Unilateral	Republic of Korea
3	Barbados	Unilateral	Republic of Korea
4	Bahamas	Unilateral	Republic of Korea
5	Singapore	Bilateral	Republic of Korea ↔ Singapore
6	Republic of Vanuatu	Unilateral	Republic of Korea
7	Hong Kong, China	Bilateral	Republic of Korea ↔ Hong Kong, China
8	Malta	Bilateral	Republic of Korea ↔ Malta
9	Ghana	Bilateral	Republic of Korea ↔ Ghana
10	Panama	Unilateral	Republic of Korea
11	Cyprus	Bilateral	Republic of Korea ↔ Cyprus
12	Belize	Unilateral	Republic of Korea
13	Saint Vincent	Unilateral	Republic of Korea
14	Malaysia	Bilateral	Republic of Korea ↔ Malaysia
15	Cambodia	Unilateral	Republic of Korea
16	Mongolia	Unilateral	Republic of Korea
17	Indonesia	Bilateral	Republic of Korea ↔ Indonesia
18	Myanmar	Bilateral	Republic of Korea ↔ Myanmar
19	England	Bilateral	Republic of Korea ↔ England
20	People's Republic of China	Bilateral	Republic of Korea ↔ People's Republic of China
21	The Philippines	Bilateral	Republic of Korea ↔ The Philippines
22	Viet Nam	Bilateral	Republic of Korea ↔ Viet Nam
23	Japan	Bilateral	Republic of Korea ↔ Japan
24	New Zealand	Bilateral	Republic of Korea ↔ New Zealand
25	Antigua and Barbuda	Unilateral	Republic of Korea
26	Kiribati	Unilateral	Republic of Korea
27	Georgia	Bilateral	Republic of Korea ↔ Georgia
28	Sri Lanka	Bilateral	Republic of Korea ↔ Sri Lanka
29	Azerbaijan	Bilateral	Republic of Korea ↔ Azerbaijan
30	Bangladesh	Bilateral	Republic of Korea ↔ Bangladesh
31	India	Bilateral	Republic of Korea ↔ India
32	Latvia	Bilateral	Republic of Korea ↔ Latvia
33	Romania	Bilateral	Republic of Korea ↔ Romania
34	Croatia	Bilateral	Republic of Korea ↔ Croatia
35	Finland	Bilateral	Republic of Korea ↔ Finland
36	Qatar	Unilateral	Republic of Korea
37	Denmark	Bilateral	Republic of Korea ↔ Qatar
38	Jordan	Bilateral	Republic of Korea ↔ Jordan

39	Germany	Bilateral	Republic of Korea ↔ Germany
40	Norway	Bilateral	Republic of Korea ↔ Norway

The Philippines			
No.	Economy	Status	Remark
1	Antigua and Barbuda	Unilateral	The Philippines
2	Australia	Bilateral	The Philippines ↔ Australia
3	Bahamas	Unilateral	The Philippines
4	Barbados	Unilateral	The Philippines
5	Belgium	Unilateral	The Philippines
6	Belize	Unilateral	The Philippines
7	Brazil	Bilateral	The Philippines ↔ Brazil
8	Brunei	Unilateral	The Philippines
9	Cambodia	Unilateral	The Philippines
10	Croatia	Bilateral	The Philippines ↔ Croatia
11	Cyprus	Unilateral	The Philippines
12	Denmark	Unilateral	The Philippines
13	Dominica	Unilateral	The Philippines
14	Egypt	Unilateral	The Philippines
15	Eritrea	Unilateral	The Philippines
16	Georgia	Bilateral	The Philippines ↔ Georgia
17	Greece	Unilateral	The Philippines
18	Hongkong	Unilateral	The Philippines
19	Iran	Bilateral	The Philippines ↔ Iran
20	Ireland	Bilateral	The Philippines ↔ Ireland
21	Isle of Man	Unilateral	The Philippines
22	Italy	Bilateral	The Philippines ↔ Italy
23	Jamaica	Bilateral	The Philippines ↔ Japan
24	Japan	Unilateral - <i>Note Verbale</i>	The Philippines
25	Republic of Korea	Bilateral	The Philippines ↔ Republic of Korea
26	Kuwait	Unilateral	The Philippines
27	Liberia	Unilateral	The Philippines
28	Luxembourg	Unilateral	The Philippines
29	Malaysia	Bilateral	The Philippines ↔ Malaysia
30	Malta	Unilateral	The Philippines
31	Marshall Islands	Unilateral	The Philippines
32	Mongolia	Unilateral	The Philippines
33	Netherlands	Bilateral	The Philippines ↔ Netherlands

34	Norway	Unilateral	The Philippines
35	Panama	Bilateral	The Philippines
36	Poland	Unilateral	The Philippines
37	Portugal	Unilateral	The Philippines
38	Qatar	Unilateral	The Philippines
39	Singapore	Unilateral	The Philippines
40	South Africa	Bilateral	The Philippines ↔ South Africa
41	St. Kitts and Nevis	Unilateral	The Philippines
42	St. Vincent and Grenadines	Unilateral	The Philippines
43	Sweden	Unilateral	The Philippines
44	Switzerland	Bilateral	The Philippines ↔ Switzerland
45	Thailand	Bilateral	The Philippines ↔ Thailand
46	Ukraine	Bilateral	The Philippines ↔ Ukraine
47	Vanuatu	Unilateral	The Philippines