

## Cultural Diversity Onboard: A Study About Crew Characteristics

Refik CANIMOĞLU<sup>1\*</sup> , Umut YILDIRIM<sup>2</sup> 

<sup>1</sup> Maritime Higher Vocational School, Sakarya University of Applied Sciences, Sakarya, Turkey,  
refikcanimoglu@subu.edu.tr

<sup>2</sup> Department of Maritime Transportation and Management Engineering, Karadeniz Technical University,  
Turkey, uyildirim@ktu.edu.tr

### ABSTRACT

Cultural diversity became a significant factor in seafarers' operational performance onboard. Since ships are operated by multinational crew members, socializing, and understanding foreign cultures became crucial for seafarers working onboard multicultural ships. Diversity management is essential for achieving an effective workforce, as well as making these benefits visible and allowing the organization to leverage them as a competitive advantage. However, apart from its advantages, diversity brought some challenges such as communication errors and cultural misunderstandings. Considering the human element is the primary factor among the maritime accident causations, challenges caused by cultural diversity has the potential to cause a raise in maritime accidents. Crew management onboard multicultural ships should be rigorously carried out to limit unwanted impacts. Our study aims to have a better view on optimal seafarer profile suitable to work onboard ships having multicultural crew members. The prepared questionnaire was administered to interns and officers worked aboard multicultural ships for this purpose, and the findings were evaluated using independent t-test analysis.

**Anahtar kavramlar:** Cultural diversity, maritime safety, teamwork, multicultural ships

## Gemilerde Kültür Çeşitliliği: Personel Özelliklerine Yönelik Bir Çalışma

### ÖZ

Kültürel çeşitlilik, denizcilerin gemideki operasyonel performanslarında önemli bir faktör haline gelmiştir. Gemiler çok uluslu mürettebat üyeleri tarafından işletildiğinden, çok kültürlü gemilerde çalışan denizciler için sosyalleşmek ve yabancı kültürleri anlamak çok önemli bir hal almıştır. Gemide kültürel çeşitlilik yönetimi, etkili bir iş gücüne ulaşmanın yanı sıra bu faydaları görünür kılmak ve kuruluşun bunları bir rekabet avantajı olarak kullanmasına izin vermek açısından oldukça önemlidir. Ancak kültürel çeşitlilik, avantajlarının yanı sıra iletişim hataları ve kültürel yanlış anlamalar gibi bazı zorlukları da beraberinde getirmektedir. Deniz kazalarının sebeplerinin başında insan unsurunun geldiği düşünüldüğünde, kültürel çeşitliliğin yarattığı zorluklar deniz kazalarında artışa neden olma potansiyeline sahiptir. Çok kültürlü gemilerde mürettebat yönetimi, istenmeyen etkileri sınırlamak için titizlikle yürütülmelidir. Çalışmamız, çok kültürlü mürettebata sahip

<sup>1\*</sup> Sorumlu yazar e-postası: refikcanimoglu@subu.edu.tr

gemilerde çalışmaya en uygun gemiadamı profili hakkında daha iyi bir görüş ortaya koymayı amaçlamaktadır. Hazırlanan anket bu amaçla çok kültürlü gemilerde görev yapan stajyer ve zabıtlere uygulanmış ve bulgular bağımsız t-testi analizi ile değerlendirilmiştir.

**Keywords:** Kültürel çeşitlilik, Denizde emniyet, Takım çalışması, Çok kültürlü gemiler.

## 1 Introduction

With the expanding maritime industry, there is a greater demand for seafarers in all positions onboard. Growing world fleet led ship owners donate their ships with multinational crew members. This need brought both positive and negative features together (Daniels, 2017). Seaway transportation is among the most global, multicultural and technological industries in the world as well as the main transportation mode within global trade (Berg et al, 2013). Considering the rate of shipping within world trade, maritime transportation issues have the potential to disrupt global trade. According to studies conducted about maritime accidents, vast majority of the maritime transportation issues occur due to human element. Cultural diversity onboard is commonly considered as a weakness (Theotokas & Progoulaki, 2007). As the cultural diversity has potential negative impacts on human element such as communication errors and cultural misunderstandings, crew management should be carried out elaborately (Yorulmaz & Yanık, 2021). Our study aims to obtain the optimum crew specifications which works onboard multinational ships from the eye of the seafarers. Our study will contribute to the maritime domain in reducing maritime accidents by improving the safety culture and teamwork efficiency onboard multinational ships.

Effects of multinational crew donation on maritime safety is a hot topic in maritime field in recent years. The Seafarers International Research Centre et. al published a report named “The Impact of Multicultural and Multilingual Crews on MARitime COMmunication” in 1999. Multinational crew effects on maritime safety were studied in 2 main categories; language conflict and cultural differences. Same report indicates that over the past 25 years 80% of the world fleet became multinational in crewing. In such environments suspicions and misunderstandings can lead to human errors and cause dangers in maritime operations (The Seafarers International Research Centre, 1999).

Pilot-master cultural diversity effect was studied in previous researches from the perspective of maritime safety. Tuncel et al. (2022) stated that communication errors between pilots and masters have a considerable impact on maritime accidents which occur during pilot embarkation and disembarkation. Horck (2008) mentioned that communication challenges may lead to maritime accidents in ports not only by seafarer errors but also by VTS (Vessel Traffic Service) operator and pilot errors. Horck (2008) also argues that in case cultural awareness courses don't become compulsory, ISM (International Ship Management) Code will lose its efficiency.

## 2 Methodology

A survey containing 16 questions about seafarer specifications was prepared with the help of an expert group. To obtain opinion of the seafarers on optimum seafarer specifications onboard multinational

ships, the prepared and electronically delivered survey was applied to 394 seafarers. A glance at respondents data indicates that respondents mostly consist of students who completed their internship onboard ships. In accordance with gender seafarer statistics, significant part of the respondents are men.

Answers of the respondents were analyzed in Statistical Package for Social Science (SPSS-25). The data was processed by independent t-test.

Prepared survey consists of 4 grouping variables and 16 test variables. Grouping variables examines whether there is significant difference between the answers given for each question by group members where test variables examine the importance of each item according to the respondents. Grouping variables and test variables are as presented in Table 1.

**Table 1. Grouping and test variables**

Code	Testing Variables
Q1	Good knowledge of daily English
Q2	Good knowledge of vocational English
Q3	Socialization skills
Q4	Respecting other religions/beliefs
Q5	Respecting cultural differences
Q6	Respecting gender equality
Q7	Being open-minded about food consumption
Q8	Being prone to teamwork
Q9	Effective usage of body language
Q10	Being understanding
Q11	Being fair
Q12	Being creative
Q13	Being prescriptive
Q14	Being friendly
Q15	Having experience at multinational ships
Q16	Having experience at current position
Code	Grouping Variables
G1	Gender (male/female)
G2	Department (deck/engine)
G3	Position (officer/cadet)
G4	Place of origin (coastal/terrestrial)

After forming the survey, respondents are asked to answer the testing questions with the scale mentioned in table 2.

**Table 2. Linguistic terms of the testing answers.**

Value	Linguistic term
1	Not important
2	Little important
3	Neutral
4	Important
5	Very important

### 3 Results and discussion

According to the t-test analysis, Q5 has the highest mean value in general with 4.51. Respondents highly believe that seafarers who will work onboard multicultural ships must respect cultural differences. Q5 is closely followed by Q4 in general with 4.50 mean value. Respondents believe that seafarers with no respect to other beliefs or religions other than theirs should not be working onboard multicultural ships. Q11, Q8 and Q10 are the next most important specifications for seafarers in this case with 4.48, 4.43 and 4.40 mean values, respectively. Being fair, understanding and prone to teamwork are considered as significantly important for seafarers working onboard ships with cultural diversity. Reliability analysis

was carried out in SPSS and Cronbach's Alpha value was found to be 0.819 which proves reliability of the analysis.

**Table 3.** Mean values

Code	Mean	Male	Female	Deck	Engine	Officer	Cadet	Coastal	Terrestrial
Q1	3.54	3.53	3.58	3.54	3.53	3.29	3.57	3.66	3.33
Q2	3.21	3.20	3.32	3.18	3.50	3.85	3.12	3.16	3.29
Q3	3.98	4.01	3.66	3.99	3.88	3.52	4.04	4.04	3.87
Q4	4.50	4.51	4.42	4.52	4.28	4.40	4.51	4.58	4.36
Q5	4.51	4.51	4.58	4.55	4.15	4.27	4.55	4.61	4.34
Q6	4.23	4.23	4.18	4.26	3.93	3.81	4.29	4.21	4.26
Q7	4.09	4.11	3.87	4.16	3.45	4.23	4.07	4.19	3.91
Q8	4.43	4.44	4.32	4.45	4.20	4.13	4.47	4.44	4.41
Q9	4.09	4.10	4.03	4.08	4.18	3.65	4.16	4.16	3.98
Q10	4.40	4.44	4.03	4.41	4.25	3.63	4.50	4.46	4.28
Q11	4.48	4.51	4.21	4.50	4.35	4.17	4.53	4.53	4.40
Q12	4.07	4.10	3.79	4.10	3.83	3.50	4.15	4.15	3.94
Q13	4.07	4.09	3.84	4.10	3.75	4.23	4.04	4.02	4.14
Q14	4.14	4.17	3.92	4.18	3.85	3.56	4.23	4.15	4.14
Q15	2.95	2.94	3.08	2.99	2.60	3.33	2.90	2.84	3.14
Q16	3.27	3.26	3.37	3.28	3.18	3.40	3.25	3.26	3.29

356 of the respondents were male where 38 were female. The biggest difference in mean value between this group members is observed in Q10. Male respondents' mean value is 4.44 where females' mean value is 4.03. This result indicates that male seafarers expect more understanding coworkers onboard a multicultural ship. Also, according to significance (sig.) value, male and female respondent answers are significantly different for Q10 as well as Q11. Being fair has mean value of 4.51 for men and 4.21 for women. This result indicates that men respondents attribute more importance to this personal value as a need at multicultural ships.

Within the departments, 354 respondents are from deck department and 40 from the engine. In this comparison, answers to test variables Q5, Q7, Q13 and Q14 are significantly different according to sig value. Seafarers from deck department attribute more importance for mentioned variables comparing to seafarers from engine department. Results indicate that remaining test variables don't have significant difference between deck and engine department seafarer answers.

Respondents consist 48 officers and 346 cadets. Answers are noted to be significantly different for Q2, Q3, Q5, Q6, Q8, Q9, Q10, Q11, Q12, Q14 and Q15. Officers attribute more importance to Q2 and Q15 comparing to cadets where cadets attribute more importance to Q3, Q5, Q6, Q8, Q9, Q10, Q11, Q12 and Q14. Experience factor between these 2 groups is considered to be the main reason for having so many significant differences in answers.

251 respondents are from coastal area in origin where 143 from terrestrial area. This group variable is involved in our study as culture between these regions are different. According to the sig values Q1, Q4, Q5, Q7 and Q12 has significantly different answers from the group members. All mentioned variables are considered to be more important by respondents from coastal area in origin.

A recent research about sailors' mental health and wellbeing indicates that people onboard feel more isolated and lonely (Sampson & Ellis, 2019). This information is closely related to seafarers socialization skills which has 3.98 mean value in our study. With this value, respondents clearly show that socialization skills are important for seafarers. In order to overcome problems of gender, belief and culture diversity, many researches advised maritime diversity training programs (Appanah et al., 2017; Phillips et al, 2016). This suggestion could have positive impact especially on Q4, Q5 and Q6. Seafarers

with diversity awareness, with knowledge of their rewards and challenges can achieve such difficulties easier and become more suitable to work in a culturally diverse ship environment. Smith et al. (2013) declared that superiors' acknowledgment and social support can help strengthen communication and relationships in multicultural working groups. Q9, Q10, Q11 and Q14 are closely related to this point. Friendly, fair and understanding approach to the seafarers by their superiors can help break down the barriers. All these test variables have mean value over 4.00 which is an indication about their importance. Sampson et al. (2020) made a research about effect of belief diversity on cargo ships. Thus, living the religious beliefs in private is a good way to prevent conflicts which may arise from this aspect. Gilliat-Ray et al. (2022) mentions that discussing religious beliefs onboard may offend other seafarers in multicultural ships. Q4 variable in our study is asking the respondents about importance of respecting other religions and beliefs which has a mean value of 4.50, indicating critical importance.

#### **4 Conclusion**

In this study, analysis about important personal characteristics for seafarers working onboard multicultural ships were carried out. Importance levels of the variables which were obtained by maritime experts were measured by independent t-test. Answers of respondents were analyzed separately as well according to their gender, department, position and place of origin and results were evaluated. It is observed that importance level of the variables may change according to these grouping variables. It is a fact that cultural diversity will widely spread in shipping industry and weak spots it cause needs to be seen and crew management should be carried out considering these points. Hiring seafarers who are not suitable to work onboard multicultural ship environment may cause extra dangers for maritime operations. So choosing the right group to hire will reduce the dangers. Our study has the potential to give an idea about what seafarers expect from their coworkers while working onboard with people from different cultures. For a healthy work environment onboard and effective teamwork, seafarer perspective needs to be considered in this subject. Results indicate that respecting cultural differences, respecting other religion/beliefs, being fair, being prone to teamwork and being understanding are really important specifications to be possessed by seafarers onboard vessels having cultural diversity. In our study, majority of the survey participants were cadets with experience onboard multinational ships. A research evaluating the same subject from deck and engine officer perspective would be useful in order to understand opinions of more experienced seafarers and discuss the differences of the results obtained in this study.

#### **5 Declarations**

##### **5.1 Competing Interests**

There is no conflict of interest in this study.

##### **5.2 Author Contribution**

**Refik CANIMOĞLU:** Conceptualization, Methodology, Software, Data curation, Writing- Original draft preparation

**Umut YILDIRIM:** Conceptualization, Supervision, Writing, Reviewing, Editing.

## References

- Appanah A, Meyer C, Ogrin R, McMillan S, Barrett E, Browning C (2017) Diversity training for the community aged care workers: A conceptual framework for evaluation. *Evaluation and Program Planning*. <https://doi.org/10.1016/j.evalprogplan.2017.03.007>.
- Berg N, Storgard J, Lappalainen J (2013) the Impact of Ship Crews on Maritime Safety. Publications Of The Centre For Maritime Studies University Of Turku. [https://www.merikotka.fi/wp-content/uploads/2018/08/Berg\\_TheImpactOfShipCrewsOnMaritimeSafety.pdf](https://www.merikotka.fi/wp-content/uploads/2018/08/Berg_TheImpactOfShipCrewsOnMaritimeSafety.pdf)
- Daley K J (2020) Diversity in the workplace: A study about diversity that exists onboard merchant ships. University of the Aegean. <https://hellanicus.lib.aegean.gr/bitstream/handle/11610/22264/Diversity%20in%20the%20workplace%20%282%29.pdf?sequence=1&isAllowed=y>.
- Daniels D M (2017) Effects on Multicultural Crews on Shipping Safety. California Maritime Academy. <https://scholarworks.calstate.edu/downloads/x059c828x>.
- Gilliat-Ray S, Smith G, Cadge W, Sampson H, Turgo N (2022) 'Here today, gone tomorrow': the risks and rewards of port chaplaincy. *Journal of Beliefs & Values*. <https://doi.org/10.1080/13617672.2022.2039982>
- Horck J (2008) Cultural and gender diversities affecting the ship/port interface. ISPIC. [https://www.academia.edu/2179601/Cultural\\_and\\_gender\\_diversities\\_affecting\\_the\\_ship\\_port\\_interface](https://www.academia.edu/2179601/Cultural_and_gender_diversities_affecting_the_ship_port_interface)
- Phillips B N, Deiches J, Morrison B, Chan F, Bezyak J L (2016) Disability Diversity Training in the Workplace: Systematic Review and Future Directions. *Journal of Occupational Rehabilitation*. <https://doi.org/10.1007/s10926-015-9612-3>
- Sampson H, Ellis N (2019) Seafarers' Mental Health and Wellbeing. Seafarers International Research Centre. <https://iosh.com/media/6306/seafarers-mental-health-wellbeing-full-report.pdf>
- Sampson H, Turgo N, Cadge W, Gilliat-Ray S, Smith G (2020) Harmony of the Seas?: Work, faith, and religious difference among multinational migrant workers on board cargo ships. *Ethnic and Racial Studies*. <https://doi.org/10.1080/01419870.2020.1776362>
- Smith L H, Hviid K, Frydendall K B, Flyvholm M A (2013) Improving the Psychosocial Work Environment at Multi-Ethnic Workplaces: A Multi-Component Intervention Strategy in the Cleaning Industry. *Journal of Environmental Research and Public Health*. <https://doi.org/10.3390/ijerph10104996>
- The Seafarers International Research Centre, World Maritime University, Institut für Sicherheitstechnik / Verkehrssicherheit e.V, Centre for Language and Communication Research and Escuela Superior de la Marina Civil de Bilbao (1999) The Impact of Multicultural and Multilingual Crews on MARitime COMMunication. The MARCOM Project Final Report. <https://trimis.ec.europa.eu/sites/default/files/project/documents/marcom.pdf>
- Theotokas I, Progolaki M (2007) Cultural diversity, manning strategies and management practices in Greek shipping. *Maritime Policy & Management*. <https://doi.org/10.1080/03088830701539198>
- Tunçel A L, Akyuz E, Arslan O (2022) Quantitative Risk Analysis for Operational Transfer Processes of Maritime Pilots. *Maritime Policy & Management*. <https://doi.org/10.1080/03088839.2021.2009133>
- Yorulmaz M, Yanık D A (2021) Gemi Kaptanlarının Yönetici Kriterlerinin Belirlenmesi. *Balkan and Near Eastern Journal of Social Sciences*. [http://www.ibaness.org/bnejss/2021\\_07\\_02/08\\_Yorulmaz\\_and\\_Yanik.pdf](http://www.ibaness.org/bnejss/2021_07_02/08_Yorulmaz_and_Yanik.pdf)



© 2020 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).