

Sustainable Management and Human Resources Practices of Cruiseline Companies as Assessed by Seafarer Crews in Southern California, USA

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Date Submitted:
February 18, 2026

Date Accepted:
May 29, 2026

Date Published:
July 06, 2026

DOI:
10.5281/zenodo.21216003

ABSTRACT

This study assessed the sustainable management and human resource practices of cruiseline companies as perceived by seafarer crews in Southern California, USA. Using descriptive, evaluative, comparative, and correlational designs, data were gathered through a validated questionnaire from 2,707 seafarer crew respondents drawn from a population of 16,030 seafaring staff. The instrument obtained an overall Cronbach's alpha of .937. Frequency, percentage, weighted mean, standard deviation, Kruskal-Wallis test, Mann-Whitney U test, and Spearman's correlation were used. Findings showed that the firms were commonly luxury, corporate-owned cruise lines operating for five to ten years and engaged mainly in short voyages. Respondents generally agreed that sustainable management and human resource practices were evident, although employee retention

needed improvement. Pollution and overtourism ranked as the leading challenge. No significant differences were found when firmographic variables were considered, but sustainable management dimensions showed significant positive relationships with human resource practices. The study concludes that sustainability and human resource systems should be integrated to strengthen cruise operations and seafarer welfare.

Keywords: *sustainable management, human resource practices, cruiseline companies, seafarer crews, Southern California, cruise tourism*

INTRODUCTION

Southern California, particularly the ports of Los Angeles, Long Beach, San Pedro, and San Diego, remains a strategic hub for cruise line operations in the United States. Its location, climate, and accessibility to destinations such as Mexico, Hawaii, and Alaska make the region significant for cruise tourism and maritime hospitality. Cruise line operations depend heavily on seafarer crews who deliver guest services, maintain safety and operational standards, and implement onboard policies in highly mobile and multicultural work environments. For this reason, the assessment of seafarer crews provides a meaningful basis for understanding how cruise line companies manage sustainability and human resources in actual operational settings.

The cruise industry has experienced renewed attention to sustainability after disruptions caused by the COVID-19 pandemic, increasing environmental regulation, and growing public concern about maritime pollution. Studies on cruise tourism point to the need for cleaner fuels, waste reduction, responsible port engagement, and more resilient business models as cruise lines recover and adapt to changing expectations (Buhalis et al., 2023; Cruise Lines International Association, 2022; Papathanassis, 2021; Sun et al., 2023). These concerns are directly connected with sustainable management because the quality of operations, logistics, compliance, technology, and

crisis preparation determines how cruise companies protect marine environments while maintaining service quality.

Human resource practices are equally important because cruise line companies operate through a diverse, transient, and globally recruited workforce. Recruitment and selection, training and development, employee welfare, performance management, compensation, retention, and separation practices affect crew motivation, service delivery, safety behavior, and organizational continuity. Previous studies indicate that training, employee well-being, work-life balance, listening practices, fair compensation, and organizational support can influence retention and employee performance in maritime and hospitality contexts (Abdullahi & Jarma, 2023; Itzchakov et al., 2023; Senbursa & Dunder, 2024; Wiig et al., 2023). In cruise ships, where work and living spaces often overlap, these practices become essential to both organizational performance and seafarer welfare.

Although sustainability and human resource management are often discussed separately, cruise line operations show that they are closely connected. A company's environmental goals cannot be implemented effectively without trained, motivated, and properly supported crew members. Likewise, human resource practices become more meaningful when they are aligned with sustainability-oriented operations, crisis preparedness, digital systems, and responsible tourism. The present study addresses this connection by assessing sustainable management and human resource practices of cruiseline companies through the perceptions of seafarer crews in Southern California, USA.

Specifically, the study aimed to determine the firmographic profile of cruise line companies; assess sustainable management practices in terms of operations, safety protocols, logistics and supply chains, regulatory compliance, upgraded service technology, and crisis management; assess human resource practices in terms of recruitment and selection, training and development, employee relationship and welfare, performance management, compensation and benefits, employee retention, and employee separation and termination; identify challenges encountered by cruise line companies; test differences in assessments when firmographic profile is considered; determine the relationship between sustainable management and human resource practices; and develop a framework to enhance sustainable and human resource practices among seafarers in cruise line companies.

Literature Review

Sustainable cruise management and environmental operations

Sustainable management in cruise tourism refers to the integration of environmental responsibility, operational efficiency, and stakeholder accountability in the delivery of cruise services. Cruise ships are resource-intensive service environments that require systematic approaches to emissions control, waste management, water use, fuel efficiency, and supplier practices. Industry reports and studies emphasize that cruise companies have increasingly adopted environmental technologies and practices to reduce their ecological footprint, including cleaner fuels, wastewater systems, recycling systems, shore power, and energy-efficient shipboard operations (Cruise Lines International Association, 2022; Klein, 2022; Vasta et al., 2023).

Operations management is central to sustainability because it covers the design, management, and improvement of systems that deliver cruise products and services. In cruise operations, this includes ship scheduling, fuel use, ship maintenance, food and supply provisioning, waste management, and guest services. Studies on cruise business development and smart cruising highlight that sustainability requires more than compliance; it also requires innovation in shipboard operations, digital systems, and service design (Buhalis et al., 2023; Papathanassis, 2022; Vogel, 2023). These insights support the study's focus on operations as one of the principal dimensions of sustainable management.

Safety, logistics, regulatory compliance, and crisis resilience

Safety protocols are foundational in cruise line sustainability because a company cannot be considered sustainable if passengers and crew are not protected from health, security, environmental, and operational risks. Cruise ships require medical facilities, emergency procedures, cybersecurity safeguards, passenger screening, life-

saving protocols, and crew training. The post-pandemic cruise environment has also made health security and crisis readiness part of service quality and business continuity (Gössling et al., 2021; Papathanassis, 2022). In this sense, safety protocols connect crew competence, passenger confidence, and long-term business viability.

Logistics and supply chain practices are also important because cruise ships depend on continuous and time-sensitive provisioning of food, fuel, equipment, amenities, and technical materials. Sustainable supply chains reduce emissions through optimized routing, responsible procurement, local sourcing, bulk purchasing, and waste minimization. Studies of cruise shipping geography and ports of call show that cruise itineraries are not merely tourism routes but logistical systems that affect fuel consumption, port relationships, and local economies (Rodrigue & Notteboom, 2020, 2022). Sustainable logistics therefore requires coordination among cruise companies, suppliers, ports, and communities.

Regulatory compliance shapes the way cruise companies respond to international and national standards on maritime safety, labor, health protection, and environmental management. Environmental rules, fuel standards, and shipping regulations have encouraged companies to invest in cleaner exhaust systems and alternative fuels (Notteboom et al., 2021; Wang et al., 2022; Zis & Psaraftis, 2021). Compliance is also linked with human resource obligations because fair work conditions, working hours, medical support, and grievance procedures influence seafarer welfare and organizational reputation.

Technology, passenger engagement, and sustainable service innovation

Upgraded service technology has become a major feature of modern cruise line management. Digital keys, mobile applications, artificial intelligence, wearable devices, virtual assistance, and onboard connectivity improve operational efficiency and guest convenience. Research on smart cruising indicates that technology can transform service delivery by supporting personalized experiences, paperless transactions, predictive maintenance, and real-time communication (Buhalis et al., 2023; Cruise Industry News, 2023; Jones & Smith, 2022). These technologies also support sustainability when they reduce paper use, improve energy monitoring, and optimize itineraries.

Passenger and crew engagement are both necessary for sustaining cruise operations. Technology can support passenger engagement through customized itineraries, booking platforms, contactless payments, and onboard information systems, but the quality of crew-passenger interaction remains essential to hospitality service. Studies on emotional intelligence, crew engagement, immersive technologies, and contactless systems show that guest satisfaction is shaped by both digital and human service components (Brown et al., 2021; Garcia & Martinez, 2023; Lee & Kim, 2023; White & Green, 2022). Thus, sustainable service innovation should complement rather than replace human-centered hospitality practices.

Human resource practices among seafarer crews

Human resource management in cruise line companies begins with recruitment and selection. Cruise companies need crew members who possess technical competence, customer-service orientation, adaptability, cultural sensitivity, and emotional resilience. The competitiveness of maritime employment requires recruitment systems that are transparent and aligned with the realities of working and living at sea. In addition, fair recruitment practices can reduce mismatch between expectations and actual work conditions, which is one factor associated with turnover in hospitality and maritime work (Abdullahi & Jarma, 2023; Cruise Lines International Association, 2023).

Training and development are necessary because seafarer crews are expected to perform multiple roles involving safety, service, communication, and crisis response. Simulator-based training, mentoring, cross-training, language preparation, cultural sensitivity, and leadership development enhance employee competence and service quality (Jones et al., 2023; Wiig et al., 2023). In the cruise context, training is not limited to technical tasks; it also includes passenger service, conflict management, sustainable practices, and emergency readiness.

Employee relationship and welfare are particularly important in cruise ships because seafarers live and work within the same physical environment for extended periods. Crew members may experience long working hours, distance from family, restricted shore leave, stress, anxiety, fatigue, and limited privacy. Recent studies on seafarer well-being emphasize the importance of work-life balance, trust, happiness, mental health, social support,

fair treatment, and access to communication with families (Senbursa & Dunder, 2024; Senbursa et al., 2025). Welfare practices therefore contribute not only to satisfaction but also to safety, performance, and retention.

Performance management, compensation and benefits, employee retention, and employee separation practices complete the human resource cycle. Listening training, fair feedback, transparent goals, medical care, retirement support, and competitive compensation influence employee commitment and reduce turnover intentions (Guillen et al., 2025; Itzhakov et al., 2023; MSC Cruises, 2023). Retention is especially relevant in the cruise industry because replacing skilled crew members involves recruitment, documentation, training, and operational adjustment costs. Separation and termination policies must also be handled fairly and ethically to protect both the company and the affected employee.

Theoretical and conceptual foundations

The study was anchored on the Resource-Based View, Strategic Human Resource Management, and Green Human Resource Management. The Resource-Based View explains that organizations gain advantage by developing valuable and difficult-to-imitate resources, including skilled and committed employees. In cruise line companies, human capital supports service quality, operational reliability, passenger satisfaction, and innovation. Strategic Human Resource Management further explains that HR policies become more effective when they are aligned with organizational goals, including sustainability goals. Green Human Resource Management extends this logic by integrating environmental values into recruitment, training, performance assessment, and employee engagement.

The conceptual framework connected firmographic profile, sustainable management practices, and human resource practices. Firmographic profile included number of years in operation, classification of cruise line, type of company ownership, and type of cruise. Sustainable management included operations, safety protocols, logistics and supply chains, regulatory compliance, upgraded service technology, and crisis management. Human resource practices included recruitment and selection, training and development, employee relationship and welfare, performance management, compensation and benefits, employee retention, and employee separation and termination. The framework guided the examination of differences according to firmographic profile and the relationship between sustainable management and human resource practices.

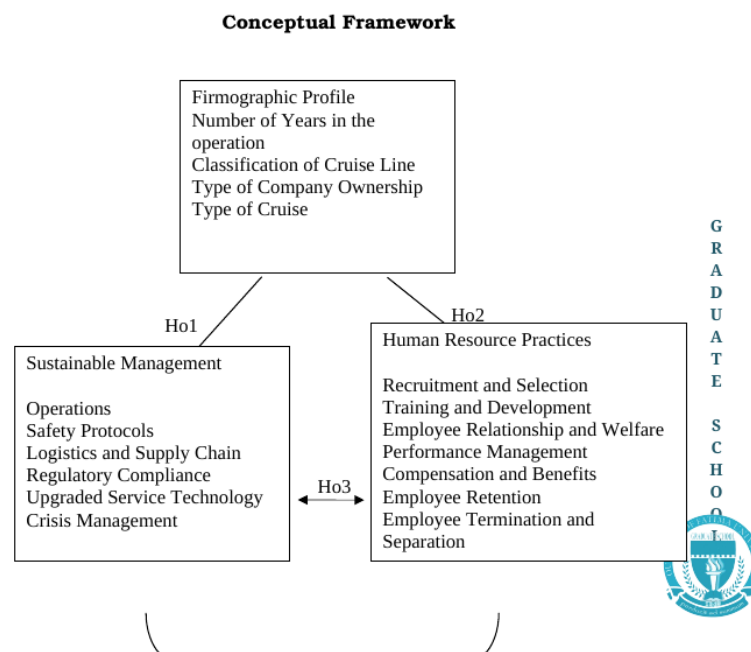


Figure 1. *Paradigm on the Proposed Framework for Enhancing Sustainable Management and Human Resource Practices*

METHODS

Research Design

The study employed descriptive, evaluative, comparative, and correlational research designs. The descriptive-evaluative component was used to assess sustainable management and human resource practices as perceived by seafarer crews. The comparative component was used to determine whether assessments differed when firmographic profile variables were considered. The correlational component was used to determine the relationship between sustainable management dimensions and human resource practices.

Research Locale

The study was conducted in Southern California, USA, a major cruise tourism and maritime operations area with access to ports such as Long Beach, San Pedro, Los Angeles, and San Diego. The locale was selected because of its relevance to cruise line operations, its accessibility to seafarer crews, and its position as a departure point for cruise routes serving nearby domestic and international destinations.

Participants and Sampling Technique

The population consisted of seafaring staff employed by cruise line companies operating in Southern California. The sampling frame covered 16,030 seafaring staff, from which a target sample of 3,043 was determined. Convenience sampling was used to reach eligible respondents. The inclusion criteria covered rank-and-file seafarer crews and those who had worked for at least one year in a cruise company. The study retrieved 2,707 completed questionnaires, equivalent to 88.9 percent of the target sample.

Research Instrument

A researcher-made questionnaire served as the primary data-gathering instrument. The instrument contained sections on the firmographic profile of cruise line companies, sustainable management practices, human resource practices, and challenges encountered. Sustainable management was measured in terms of operations, safety protocols, logistics and supply chains, regulatory compliance, upgraded service technology, and crisis management. Human resource practices were measured in terms of recruitment and selection, training and development, employee relationship and welfare, performance management, compensation and benefits, employee retention, and employee separation and termination.

The questionnaire was validated by the adviser and experts with backgrounds in business administration, hospitality, tourism, and management. A pilot test was conducted to assess reliability before the actual survey. The overall Cronbach's alpha was .937, indicating strong internal consistency. Reliability coefficients for the study dimensions ranged from .836 to .968, supporting the internal reliability of the instrument.

Data Gathering Procedure

After securing the necessary approval, permission letters were prepared for the cruise line companies and other relevant stakeholders. The questionnaire was distributed through a hybrid approach that used Google Forms, email, Facebook, Messenger, and limited face-to-face contact depending on the respondents' availability. Follow-up communication was conducted to improve response retrieval. Completed questionnaires were checked, scored, tabulated, and prepared for statistical analysis.

Data Analysis

Frequency and percentage distribution were used to describe the firmographic profile of the cruise line companies. Weighted mean and standard deviation were used to summarize the assessments of sustainable management practices, human resource practices, and challenges encountered. The scale interpretation used in the study was 3.50-4.00 for Strongly Agree, 2.50-3.49 for Agree, 1.50-2.49 for Disagree, and 1.00-1.49 for Strongly Disagree. Kruskal-Wallis and Mann-Whitney U tests were used to test significant differences when firmographic variables were considered. Spearman's correlation was used to determine the relationship between sustainable management dimensions and human resource practices.

Ethical Consideration

Ethical procedures were observed throughout the study. Respondents were informed about the purpose of the research, their role as participants, the voluntary nature of participation, and their right to decline or withdraw without penalty. Informed consent was obtained before the survey was completed. No incentives were offered. Confidentiality and privacy were maintained by limiting disclosure to information relevant to the study and by securing the data gathered from respondents.

RESULTS AND DISCUSSION

Firmographic profile of cruise line companies

The firmographic profile showed that the largest proportion of cruise line companies had been operating for 5-10 years (42.9%), followed by 1-5 years (28.6%), 11-15 years (21.4%), and 16 years and above (7.1%). In terms of classification, luxury cruise lines accounted for half of the companies (50.0%), followed by budget (28.6%) and premium (21.4%). Most companies were corporations (64.3%), while the rest were sole proprietorships, partnerships, or franchises. Short voyages represented the majority of cruise types (71.5%). These results indicate that the sampled cruise line companies were mostly established corporate operators that primarily provided short-voyage cruise services.

Table 1. *Firmographic Profile of Cruise Line Companies*

Profile variable	Highest category	Frequency	Percentage
Years in operation	5-10 years	6	42.9
Classification of cruise line	Luxury	7	50.0
Type of ownership	Corporation	9	64.3
Type of cruise	Short voyage	10	71.5

Assessment of sustainable management practices

The seafarer crews generally agreed that sustainable management practices were observed in cruise line companies. Safety protocols obtained the highest average (WM = 3.19), followed by crisis management (WM = 3.17), upgraded service technology (WM = 3.12), operations (WM = 3.00), logistics and supply chains (WM = 2.72), and regulatory compliance (WM = 2.58). Although all dimensions were interpreted as Agree, the lower means for logistics and supply chains and regulatory compliance suggest areas where cruise line companies may continue to strengthen sustainability systems, supplier standards, compliance monitoring, and efficiency measures.

The relatively high assessment of safety protocols is consistent with the operational reality of cruise ships, where medical readiness, cybersecurity, emergency procedures, and health screening are necessary for passenger and crew safety. The positive assessment of crisis management also reflects the growing importance of business continuity and risk communication in post-pandemic cruise operations (Gössling et al., 2021; Papathanassis, 2022). Meanwhile, logistics and compliance remain challenging because sustainable supply chains require external coordination among suppliers, ports, regulators, and local communities (Rodrigue & Notteboom, 2022).

Table 2. *Summary Assessment of Sustainable Management Practices*

Dimension	WM	SD	Interpretation
Operations	3.00	0.741	Agree
Safety protocols	3.19	0.507	Agree
Logistics and supply chains	2.72	0.577	Agree
Regulatory compliance	2.58	0.830	Agree
Upgraded service technology	3.12	0.425	Agree
Crisis management	3.17	0.409	Agree

Assessment of human resource practices

The respondents generally agreed that human resource practices were evident in cruise line companies. Employee relationship and welfare and performance management obtained the highest average ratings (WM = 3.20), followed by compensation and benefits (WM = 3.19), recruitment and selection (WM = 3.18), training and development (WM = 3.13), and employee separation and termination (WM = 3.12). Employee retention obtained the lowest mean (WM = 2.48) and was interpreted as Disagree, indicating that retention remained the weakest human resource area in the study.

The findings suggest that cruise line companies had clear systems for recruitment, training, welfare support, performance feedback, compensation, and separation procedures, but crew retention required more attention. The low-rating for employee retention was connected with items on quality meals, comfortable living quarters, recreational facilities, and affordable internet access. This aligns with literature emphasizing that seafarer retention is shaped by welfare conditions, family communication, work-life balance, compensation, and professional development opportunities (Senbursa & Dunder, 2024; Senbursa et al., 2025).

Table 3. *Summary Assessment of Human Resource Practices*

Dimension	WM	SD	Interpretation
Recruitment and selection	3.18	0.431	Agree
Training and development	3.13	0.407	Agree
Employee relationship and welfare	3.20	0.419	Agree
Performance management	3.20	0.407	Agree
Compensation and benefits	3.19	0.367	Agree
Employee retention	2.48	0.476	Disagree
Employee separation and termination	3.12	0.425	Agree

Challenges encountered by cruise line companies

Pollution and overtourism ranked as the highest challenge encountered by cruise line companies (WM = 3.27), followed closely by international laws (WM = 3.26) and staffing shortage (WM = 3.20). Disease outbreak ranked fourth (WM = 3.12), while changing traveler preference, media scrutiny, and heavy debt and fuel cost ranked lower. These results indicate that environmental and destination-related pressures were perceived as the most pressing challenges, while financial and fuel-related pressures, although still relevant, were assessed as less challenging in the ranking.

The prominence of pollution and overtourism supports the need for stronger environmental management, port coordination, and community engagement. Cruise sustainability studies note that environmental effects, local carrying capacity, emissions, and waste remain significant public and regulatory concerns (Cruise Lines International Association, 2022; Klein, 2022; Vasta et al., 2023). Since international regulations also ranked highly, cruise companies must continuously align operations with maritime, environmental, and labor standards while balancing passenger satisfaction and local community interests.

Table 4. *Challenges Encountered by Cruise Line Companies*

Challenge	WM	Rank
Pollution and overtourism	3.27	1
International laws	3.26	2
Staffing shortage	3.20	3
Disease outbreak	3.12	4
Changing traveler preference	3.00	5
Media scrutiny	2.91	6
Heavy debt and fuel cost	2.76	7

Differences in assessments when firmographic profile is considered

The tests of significant difference showed that there were no significant differences in the respondents' assessment of sustainable management practices when the firmographic profile of the cruise line companies was considered. All p-values were greater than .05 across number of years in operation, classification of cruise line, type of company ownership, and type of cruise. This indicates that seafarer crews assessed sustainable management practices in a generally similar manner regardless of the selected firmographic characteristics.

Table 5. *Test of Significant Difference in Sustainable Management Practices by Firmographic Profile*

Sustainable management practice	Years	Classification	Ownership	Cruise type
Operations	0.547 NS	0.657 NS	0.320 NS	0.539 NS
Safety protocols	0.980 NS	0.540 NS	0.284 NS	0.733 NS
Logistics and supply chains	0.792 NS	0.592 NS	0.320 NS	0.374 NS
Regulatory compliance	0.826 NS	0.592 NS	1.000 NS	0.454 NS
Upgraded service technology	0.708 NS	0.605 NS	0.306 NS	0.539 NS
Crisis management	0.956 NS	0.503 NS	0.306 NS	0.945 NS

Similarly, no significant differences were found in the respondents' assessment of human resource practices when firmographic variables were considered. All p-values were greater than .05. This suggests that the human resource practices observed by seafarer crews were assessed consistently across the selected company profiles. From a management perspective, this result may indicate that cruise companies apply relatively standardized HR systems across different classifications, ownership types, operational histories, and cruise types.

Table 6. *Test of Significant Difference in Human Resource Practices by Firmographic Profile*

Human resource practice	Years	Classification	Ownership	Cruise type
Recruitment and selection	0.980 NS	0.446 NS	1.000 NS	0.733 NS
Training and development	0.826 NS	0.573 NS	0.284 NS	0.454 NS
Employee relationship and welfare	0.844 NS	0.579 NS	0.306 NS	0.454 NS
Performance management	0.844 NS	0.491 NS	0.982 NS	0.454 NS
Compensation and benefits	0.980 NS	0.897 NS	1.000 NS	0.733 NS
Employee retention	0.826 NS	0.573 NS	0.284 NS	0.454 NS
Employee separation and termination	0.708 NS	0.605 NS	0.306 NS	0.539 NS

Relationship between sustainable management and human resource practices

Spearman's correlation results showed significant positive relationships between all sustainable management dimensions and all human resource practice dimensions. The correlation coefficients ranged from 0.700 to 0.891, and all p-values were 0.000. These results indicate that stronger human resource practices were associated with stronger assessments of sustainable management. The highest observed correlation was between performance management and logistics and supply chains ($r_s = 0.891$), followed by employee relationship and welfare and regulatory compliance ($r_s = 0.890$), employee retention and safety protocols ($r_s = 0.877$), and employee separation and termination and upgraded service technology ($r_s = 0.872$).

The significant positive relationships imply that sustainability in cruise line companies is not only a technical or environmental concern but also a human resource concern. Crew members need to be properly recruited, trained, supported, evaluated, compensated, retained, and treated fairly during separation for sustainable management practices to function effectively. These findings support the theoretical assumption of Strategic Human Resource Management and Green Human Resource Management that human resource systems can be aligned with organizational sustainability goals.

Table 7. Spearman Correlations Between Human Resource Practices and Sustainable Management Practices

HR practice	OP	SP	LSC	RC	UST	CM
Recruitment and selection	0.856	0.723	0.755	0.738	0.700	0.721
Training and development	0.808	0.753	0.732	0.729	0.857	0.790
Employee relationship and welfare	0.871	0.857	0.704	0.890	0.843	0.773
Performance management	0.769	0.802	0.891	0.739	0.819	0.805
Compensation and benefits	0.740	0.812	0.740	0.800	0.737	0.791
Employee retention	0.832	0.877	0.726	0.812	0.827	0.815
Employee separation and termination	0.857	0.790	0.871	0.741	0.872	0.745

Legend: OP = Operations; SP = Safety Protocols; LSC = Logistics and Supply Chains; RC = Regulatory Compliance; UST = Upgraded Service Technology; CM = Crisis Management. All correlations were significant at $p = 0.000$.

Proposed framework for sustainable and human resource practices

Based on the findings, the proposed framework integrates human resource practices, sustainable management practices, challenges encountered, and expected outcomes. Human resource practices form the workforce foundation of the framework, while sustainable management practices provide the operational and environmental foundation. Challenges such as pollution, overtourism, fuel cost, heavy debt, and environmental pressures serve as contextual issues that companies must address. The expected outcomes include sustainable cruise operations, improved employee performance, better passenger satisfaction, environmental responsibility, operational efficiency, and long-term competitiveness.

Table 8. Proposed Framework for Sustainable and Human Resource Practices of Seafarers in Cruise Line Companies

Human resource practices	Sustainable management practices	Challenges encountered	Expected outcomes
Recruitment and selection	Operations management	Pollution	Sustainable cruise operations
Training and development	Safety protocols	Overtourism	Improved employee performance
Employee relations and welfare	Logistics and supply chain	Fuel cost	Better passenger satisfaction
Performance management	Regulatory compliance	Heavy debt	Environmental responsibility
Employee retention	Upgraded service technology	Environmental pressures	Operational efficiency
Employee separation and termination	Crisis management		Long-term competitiveness

CONCLUSION

The study concluded that seafarer crews generally perceived cruise line companies in Southern California as practicing sustainable management across operations, safety protocols, logistics and supply chains, regulatory compliance, upgraded service technology, and crisis management. Among these dimensions, safety protocols and crisis management received the strongest assessments, while logistics and supply chains and regulatory compliance received comparatively lower but still positive assessments.

The study also concluded that human resource practices were generally evident in the areas of recruitment and selection, training and development, employee relationship and welfare, performance management, compensation and benefits, and employee separation and termination. However, employee retention emerged as the weakest area, indicating the need for stronger welfare, communication, living-condition, recreational, career-development, and retention-support measures for seafarer crews.

No significant differences were found in the assessment of sustainable management and human resource practices when firmographic variables were considered. This suggests that respondents assessed the practices consistently regardless of years in operation, cruise line classification, ownership type, and type of cruise. However, significant positive relationships were found between sustainable management and human resource practices, showing that better HR systems are associated with stronger sustainable management practices. The study therefore contributes to cruise line management by demonstrating that sustainability and human resource systems should be managed as integrated and mutually reinforcing organizational priorities.

Recommendation

Seafarer crews should continuously improve their professional competencies by participating in training on sustainability practices, safety protocols, upgraded service technologies, crisis management, and customer service. They should also support company policies that promote environmental responsibility and operational efficiency.

Cruise line companies should strengthen sustainable management initiatives by investing in environmentally responsible technologies, improving waste management systems, strengthening supplier standards, reducing pollution, and implementing measures to address overtourism. Companies should also strengthen HR practices that directly affect employee satisfaction, performance, and retention.

Human resource departments should align recruitment, training, welfare, compensation, performance management, and retention programs with the sustainability goals of the company. Special attention should be given to employee retention by improving living conditions, meals, recreational access, affordable communication with families, career pathways, and support services for crew members.

Government agencies and regulatory bodies should continue strengthening policies, monitoring systems, and collaborative mechanisms related to environmental protection, maritime safety, labor welfare, health protection, and sustainable tourism. Local communities should work with cruise line companies to promote tourism activities that protect local resources and preserve cultural heritage.

Future researchers may expand the study by including other cruise regions, different types of maritime operations, larger respondent groups, and additional variables such as organizational culture, leadership, digital transformation, employee engagement, mental health, and environmental performance. Further qualitative inquiry may also be conducted to deepen understanding of seafarer experiences behind the quantitative results.

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