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All Hands on Deck: Ensuring Sustainability in Philippine Maritime Education through Global Standards Compliance

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ABSTRACT

The European Maritime Safety Agency (EMSA) flagged the Philippines for noncompliance with STCW (Standards of Training, Certification, and Watchkeeping) requirements. The Philippines' failure to improve their Maritime Education and Training (MET) puts the country's eligibility for Filipino seafarers' employability at risk. Data obtained from interviews with a partner maritime institution will be used to evaluate if the partner institution complies with the Maritime Industry Authority (MARINA) adjustments and EMSA's requirements by looking at the second key area. The researchers used legal frameworks and management frameworks (internal and external factor evaluation) to assess the partner institution's performance. Even if the Philippines has just recently passed the EMSA audit, this paper would be beneficial to continue improving Philippine MET to avoid negative future international audits. Overall, the researchers recommend that the partner institution reinstate its BS in Marine Engineering and Electro-technology program, that the maritime industry develops its training programs and governance system, and that future researchers include all six key areas to provide a better assessment of the industry's sustainability.

1. Chapter One.

1.1. Background of the Study.

Throughout increasing globalization, the maritime industry has been a crucial component. With more than 90% of global goods undergoing maritime trade, the demand for maritime transport is expected to triple the current maritime trade volume by 2050.[2] As an archipelago, the Philippines has a significant role in establishing a coordinated maritime transport network for commerce and travel.[3] Among the countries supplying maritime labor, the Philippines leads with ~30% of the global maritime seafarer supply.[4]

Through Republic Act No. 10635, MARINA serves as the single maritime administration that is responsible for development throughout the Philippine maritime industry.[5] Four major sectors characterize the industry: domestic shipping, overseas shipping, shipbuilding and repair, and maritime staffing and development.[6] In the area of maritime staffing, the remittances of

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[2] Organisation for Economic Co-operation and Development, Ocean Shipping and Ship Building, available at https://www.oecd.org/ocean/topics/ocean-shipping/ (last accessed February 2, 2023).

[3] United Nations Economic and Social Commission for Asia and the Pacific, The Philippine Maritime Industry: Prospects and Challenges in 2013 and Beyond, at 1, available at https://www.unescap.org/sites/default/files/0.Philippines-1.pdf (last accessed February 2, 2023).

[4] Oxford Business Group, Filipinos are Active in the Global Maritime Sector, available at https://oxfordbusinessgroup.com/reports/philippines/2015-report/economy/seafaring-nation-filipino-workers-have-become-an-essential-part-of-the-global-maritime-industry (last accessed February 2, 2023).

[5] An Act Establishing the Maritime Industry Authority (MARINA) as the Single Maritime Administration Responsible for the Implementation and Enforcement of the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, as amended, and International Agreements or Covenants Related Thereto, Republic Act No. 10635, § 3 (2013).

[6] Maritime Industry Authority, MARINA Statistical Report 2017-2021, at

Filipino seafarers have contributed 9.8% of the country's total Gross Domestic Product (GDP).[7]

Recent developments have raised concerns about the quality of the staffing the Philippines supplies. For the past 16 years, the European Maritime Safety Agency (EMSA) warned the Philippines regarding their noncompliance with STCW (Standards of Training, Certification, and Watchkeeping) requirements.[8] Since 2006, the Philippines failed to adapt fully, placing the country in a precarious situation, risking being excluded from the International Maritime Organization's (IMO's) "whitelist" of nations with seafarer employability.[9] MARINA has issued its response to the audit, which contains in-depth reviews of the state of maritime education in maritime schools and the strategic corrective actions.[10]

1.2. Statement of the Problem.

Prioritizing the labor sector, the International Labor Organization (ILO) and the IMO work together to set labor standards, enhance social protection, and promote rights at work for over 400,000 Filipino seafarers. In 2022, IMO and ILO established the ILO – IMO Tripartite Working Group to Identify and Address Seafarers' Issues and the Human Element (JTWG). Through its audit, the EMSA, a European Union regulatory agency that creates a safe, secure, green, and competitive maritime sector, has also identified issues concerning the country's capability in the industry. All of these agencies act in a regulatory manner, with non-compliance with their standards possibly leading to repercussions and disruption of the Philippine supply of maritime workforce.

MARINA was created to integrate the development, promotion, and regulation of the country's maritime industry.[11] Despite its progressive efforts to achieve such vision and goals, the European Commission (EC), through the EMSA, released an assessment report on the Philippines' maritime education, training, and certification system. The report listed nine shortcomings and twenty-three grievances, supplemented by recommendations to redress the report's findings and sustain long-term reforms.

With MARINA's newly mandated policies submitted in response to the findings above, **this thesis looks into the sustainability aspect of such policies – whether or not these would consistently develop and improve the country's MET system.** Specifically, this paper will focus on the maritime programs offered by the partner institution as it aims to answer the question: "How does aligning the country's maritime educational, training, and certification systems with the STCW Code contribute to the sustainability of the Philippine maritime industry?"

1.3. Thesis Statement.

The study's thesis statement is as follows:

"A Philippine Maritime Education Institute that is aligned with the STCW ensures sustainability by guaranteeing quality seafarers, who have the skills and abilities to be trained and employed following international standards. Such alignment with international standards allows the Philippine Maritime Education to be worth investing in through improved maritime training and assessment achievable by continuous monitoring and evaluation."

1.4. Research Methodology.

1.4.1. Data Gathering Technique.

Most of the data gathering will be in the form of a literature review of relevant data from the standards set by the EMSA and data for other factors from the partner institution through interviews.

1.4.2. Data Gathering Procedure.

Most of the data collected will be from online sources, including EMSA standards. For the interviews, the researchers will contact relevant personalities from the partner institution to gather data to complete the research.

1.4.3. Data Analysis.

After collecting all relevant data, the researchers will compare the standards set by EMSA to the partner institution. Through this, the researchers may find gaps and inconsistencies to propose recommendations for the target institution to be on par with the standards set by EMSA.

1.5. Review of Related Literature.

1.5.1. 2022 Philippine Response.

The Philippines' response to EMSA's audit is detailed in MARINA's 2022 report, where each grievance is countered with the corrective actions taken. One of the critical areas for improvement and compliance is the monitoring, supervision, and evaluation of training and assessment.[12] The deficits in this key area include the MHEIs not planning the courses, not following the lesson schedules or timetables, not carrying out the practical training outlined in the course syllabi, not systematically recording students' attendance, and not admitting students to

2, available at https://marina.gov.ph/wp-content/uploads/2022/06/2017-2021-MARINA-Statistical-Report-1.pdf (last accessed February 2, 2023).

[7] Technical Education and Skills Development Authority, The Philippine Maritime Industry Through the Years, at 12, available at https://www.tesda.gov.ph/Uploads/File/planning2017/LMIR/MARITIME%20-LMIR%20March%2017%20with%20cover%202017.pdf (last accessed February 2, 2023).

[8] Karl Garcia, Some Observations on Philippine Maritime Education, The Maritime Review, November 26, 2021, available at https://maritimereview.ph/some-observations-on-philippine-maritime-education/ (last accessed February 2, 2023).

[9] Philstar Global, Philippines Corrects Course to Meet Global Seafarer Training Standards, Philstar, November 17, 2022, available at https://www.philstar.com/headlines/2022/11/17/2224535/philippines-corrects-course-meet-seafarer-training-standards (last accessed February 2, 2023).

[10] Maritime Industry Authority, 2022 Philippine Response, available at https://marina.gov.ph/wp-content/uploads/2022/06/2022-PHILIPPINE-RESPONSE.pdf (last accessed February 2, 2023).

[11] Id. at 2.

[12] Maritime Industry Authority, supra note 10.

courses according to the MHEI's carrying capacity.[13] To address these, CHED-MARINA required MHEIs to submit a corrective action plan. They also issued a memorandum (instructing MHEIs to revise their teaching syllabi) elaborating additional student attendance policies and ensured better monitoring and supervision of MHEIs. Carrying capacity computations and the list of equipment per MHEI were reviewed. Moreover, an Annual Monitoring Program of MHEIs will be implemented to use the monitoring results as a basis for improvement. The study presents the factors contributing to the results of the EMSA audit and CHED-MARINA's procedures to address these issues.

1.5.2. The 1978 International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW).

The 1978 STCW Convention, established by the IMO, was the first to establish basic requirements for the training, certification, and watchkeeping for seafarers on an international level. The Philippines has been a cooperative member of the IMO since 1964 as it observes and enforces the rules on the safety and security of shipping.[14] The Convention prescribes minimum standards that member states must meet or exceed. Additionally, the STCW was created to improve worldwide education, training, and safety standards. The research will primarily focus on the STCW Convention as its basis for identifying whether MARINA's new policies ensure the sustainability of the maritime industry.

1.5.3. The Challenges In Philippine Maritime Education and Training.

The challenges the Philippines faces regarding their MET are the global supply and demand market and compliance with the STCW Convention.[15] As the Philippines is one of the world's leading suppliers of maritime workers, compliance with the STCW Convention and Code is to be given utmost importance for the safety and security of Filipino seafarers.

The research states that the difficulties in Philippine MET can be divided into two parts. The first stipulated that Philippine MET must be compliant with the requirements of the international maritime rules. The second cites the improvement of MET in the Philippines. The government has already established a body called the National Quality Standard System (NQSS) that combines the quality standards of all maritime-involved agencies such as the Philippine Regulation Commission (PRC), Technical Education Skills Development Authority (TESDA), Commission on Higher Education (CHED), and the National Telecommunications Commission (NTC).[16] The second part would be harder to address due to factors such as the consistent pressure applied on training institutions to match international standards as well as the requirement for a "strong commitment" by all collaborators in the maritime industry.[17]

1.5.4. Improving governance of maritime higher education institutions.

The success of Filipino cadets is scarce, as indicated by low MET Institutions' success rates.[18] In 2020, only 17% of Filipino marine cadets had an embarkation opportunity and were able to work as seafarers.[19] This is due to an inconsistency between MARINA's policies and the performance of METIs and a low level of supervision and regulation by MARINA. MARINA's system of governance in MET must be reviewed to comply with STCW standards. Quality education in the Philippine METIs must be provided and monitored to increase cadet opportunities.[20]

1.6. Scope and Limitations.

The scope of the study shall include the state of the Philippine maritime educational system and its gaps with international standards and focus on a partner Philippine MHEI that is accredited to offer maritime degree programs. Given the extensive key areas evaluated by the EMSA as a global accrediting body, the study shall look in depth at the specific key area of Monitoring, Supervision, and Evaluation of Training and Assessment. The said key area should include the following aspects: course outlines, training schedules and attendance, and carrying capacities.

The study shall be limited to the online data and the institution's responses. The researchers bore no control over the willingness of the partner institution to participate and their answers. The study shall only be used to evaluate compliance with the standards set by the MARINA. As such, the results of this study shall be interpreted toward the level of compliance of the specific institution alone.

2. Chapter Two.

2.1. Legal Framework.

2.1.1. 1987 Philippine Constitution.

Article XII Section 14 (sustained development of national talents). This section states that "The sustained development of a reservoir of national talents. . . in all fields shall be promoted by the State." The state shall encourage appropriate technology and regulate its transfer for the national benefit."[21] This highlights the sense of urgency for the Philippines regarding the improvement of their MET to avoid future failure of international audits and ensure the global employment of Filipino seafarers.

[13] Maritime Industry Authority, supra note 10, at 112-120.

[14] Maritime Industry Authority, Philippines Re-elected to Council of IMO, available at https://marina.gov.ph/2019/11/30/philippines-re-elected-to-council-of-imo/ (last accessed February 2, 2023).

[15] Angelica Baylon & Vadm Santos, The Challenges in Philippine Maritime Education and Training, in International Journal of Innovative Interdisciplinary Research 34 (2011).

[16] Baylon & Santos, supra note 19,. at 39-41.

[17] Id.

[18] Cleto Del Rosario, et al., Improving Governance of Maritime Higher Education Institutions to Ensure Success of Filipino Cadets, in The Maritime Commons: Digital Repository of the World Maritime University 3301-3309 (2020).

[19] Id.

[20] Id.

[21] Phil Const. art 12, § 14

Article XIII Section 3 (protection of labor). This section states that "The State shall afford full protection to labor, local and overseas, organized and unorganized, and promote full employment and equality of employment opportunities for all."[22] This highlights the importance of improvement of the Philippines' MET programs. Despite recent developments, the Philippines may be blacklisted by the EMSA if standards are not met; thus, the country must constantly improve its Maritime program.

Article XIV Sections 1, 2(1), 4(1) (promoting the importance of education). SECTION 1. The State shall protect and promote the right of all citizens to quality education at all levels and shall appropriate steps to make such education accesible to all.[23]

SECTION 2. The State shall: (1) Establish, maintain, and support a complete, adequate, and integrated system of education relevant to the needs of the people and society.[24]

SECTION 3. The State recognizes the complementary roles of public and private institutions in the educational system and shall exercise reasonable supervisión and regulation of all educational institutions.[25]

The first and fourth sections of Article XIV show that quality education through recognized educational institutions is a must. It must be ensured that Philippine MET is constantly aligned with programs abroad. The second section's importance to this study stems from the fact that the Philippines is one of the world's leading suppliers of seafarers. Should the Philippines' supply of maritime workers be interrupted, its economy would likely face repercussions due to the Philippine maritime industry's contributions to the Philippine GDP.

Pertinent Treaties and Conventions. The 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)

The Philippines has been a cooperative member of the IMO since 1964 as a signatory of the Convention of the Intergovernmental Maritime Consultative Organization, now called the IMO.[26] The IMO is the agency of the United Nations that oversees the maritime industry through global standard-setting authority for the safety, security, and environmental performance.[27] In 1978, the IMO held a convention to improve worldwide standards for the protection and training of professional mariners – the STCW Convention. As of 2018, 164 nations, representing 99.2% of world shipping tonnage, have ratified the STCW.[28]

The STCW has set down qualification standards for masters, officers, and watch personnel on seagoing merchant ships and has established standardized maritime training and certification across all IMO member states.[29] Since this study centers on MHEIs, along with the training and assessment carried out by MET Institutions, the STCW Convention will function as the appropriate framework to fully ensure the achievement of the globally defined objectives and standards of competence for maritime training.

2.1.2. Republic Acts.

Republic Act No. 10635. RA No. 10635 establishes the authority of the MARINA over the implementation of the aforementioned international convention of the STCW and other maritime laws.[30] Before this law, various functions, including issuing and canceling certificates of competency and proficiency, were delegated to different government agencies such as the PRC, TESDA, CHED, etc. Through this law, MARINA has effectively assumed these responsibilities as the sole overhead government authority towards developing the maritime industry and education in the Philippines and ensuring that the industry is compliant with international regulations.[31]

2.1.3. Charters of MARINA.

MARINA Citizen's Charter. This charter aims for a globally competitive Philippine maritime sector by leading a Progressive Maritime Administration for safer people, safer ships, and a cleaner marine environment.[32] Furthermore, it provides for issuing necessary permits to ensure ships' quality and Filipino seafarers' safety. This also includes licensing requirements of Filipino seafarers to ensure their service is in-line with the qualities set by the MARINA and other seafarer conventions. It provides for the different regulations, permits, and conventions that help make the Philippine Maritime Industry more competitive.

2.1.4. MARINA Memos and Circulars.

JCMMC No. 01, series of 2022. Joint CHED-MARINA Memorandum Circular (JCMMC) No. 01 series of 2022 elaborates on revised policies, standards, and guidelines (PSGs) for the program and course design of Bachelor of Science in Marine Transportation and Bachelor of Science in Marine Engineering programs.[33] MARINA has required MHEIs to ensure all practical assessments are based on the learning outcomes that students must learn. This elaborates on the standards for the performance indicators, metrics, targets, and curriculum.[34] It also requires MHEIs to include policies and procedures on the design, development, and monitoring of laboratory equipment

[22] Phil const. art 13, § 3
[23] Phil const. art 14, § 1
[24] Phil const. art 14, § 2(1)
[25] Phil const. art 14, § 4(1)
[26] Convention on the Intergovernmental Maritime Consultative Organization 1, opened for signature Mar. 6, 1948.
[27] International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, adopted July 7, 1978.
[28] Id.
[29] Id.
[30] An Act Establishing the Maritime Industry Authority (MARINA) as the Single Maritime Administration Responsible for the Implementation and Enforcement of the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, as amended, and International Agreements or Covenants Related Thereto, Republic Act No. 10635, § 3 (2013).
[31] Id.
[32] Maritime Industry Authority, Citizen's Charter Handbook, available at https://marina.gov.ph/wp-content/uploads/2022/06/MARINA-CITIZENS-CHARTER-1ST-EDITION-2022.pdf (last accessed Feb. 25, 2023).
[33] Maritime Industry Authority, 2022 Philippine Response, available at https://marina.gov.ph/wp-content/uploads/2022/06/2022-PHILIPPINE-RESPONSE.pdf.
[34] Supra note 13, at 81.

and simulator exercises and ensure that the MHEIs systematically implement lessons aligned to the learning outcomes.

JCMMC No. 03, series of 2022. JCMMC No. 3 elaborates on the revised guidelines for MHEI program monitoring. CHED-MARINA has released the Outcomes Based Monitoring Instruments (OBMI) which will aid them in their Annual Monitoring Program. MHEIs will be under constant monitoring to ensure they adhere to the PSGs CHED-MARINA has established.[35] This monitoring includes the need for specific evidence for the inspector to verify the schools' compliance. This memorandum ensures the compliance of MHEIs' education programs to STCW standards. It emphasizes the regular monitoring that will be done to ensure continuous adherence and to analyze the state of MHEIs.

2.2. Management Frameworks.

2.2.1. Internal Factors Evaluation (IFE) Matrix.

Philippine MET IFE Matrix			
Strengths	**Weight**	**Score**	**Wtd. Score**
Large manpower count of maritime workers			
Country location (i.e., archipelagic)			
Number of courses for maritime education			
Partnership between schools and shipping companies			
Passing rate of maritime education institutions			
Weaknesses	**Weight**	**Score**	**Wtd. Score**
Insufficient observation of safety protocols			
Poor student to faculty/personnel ratio			
Lack of necessary practical/laboratory equipment			
Inconsistent implementation of course materials			
Poor monitoring systems			
TOTAL			

2.2.2. Strengths.

The Philippines is one of the largest suppliers of seafarers, delivering 6.4 billion USD in revenues as of 2020, beating countries such as China and India.[36] The country is also archipelagic, which presents many opportunities for MET**.** Next, the large manpower count of seafarers is also brought about by the abundance of maritime schools in the Philippines, as there are 81 maritime schools in the country as of the year 2021.[37] Additionally, there are approximately 87,960 maritime students out of roughly 3.2 million enrollees for 2019-2020.[38] There are a total of 17,635 graduates from the maritime education discipline. Another strength is that some well-known shipping companies sponsor the maritime education of students in different universities that offer maritime education.[39]

2.2.3. Weaknesses.

Philippine MET's observation of safety protocols is insufficient, which resulted in the Philippines' continuous failure to comply with STCW requirements.[40] Delving deeper into the recent EMSA audit, the group has recognized other internal weaknesses such as poor monitoring systems, inconsistent course implementation, lack of equipment, and poor student-to-facilities/personnel ratios. Poor monitoring systems involve the absence of specific recording methods for data which include the students' attendance.[41] There also are inconsistencies with the course materials, specifically how the actual teaching of the course is executed compared to the course syllabi.[42] Another weakness is the lack of laboratory equipment that is necessary for the conduct of practical and laboratory assessments, as the poor ratio of students to laboratory equipment undermines the capability of students to operate these equipment.[43] Consequently, the weakness of a poor ratio is also observed between the student and the facility or personnel, which impacts the quality of learning.[44]

2.2.4. External Factors Evaluation (EFE) Matrix.

Philippine MET EFE Matrix			
Opportunities	**Weight**	**Score**	**Wtd. Score**
Increasing global demand for filipino seafarers			
Proposal to increase MARINA's budget			
Implementing an improved maritime scholarship fund program			
Changes in the policies, standards, and guidelines (PSG) of CHED on maritime educational curriculum			
Maritime Exchange Student Programs			
Threats	**Weight**	**Score**	**Wtd. Score**
Future EMSA Audits			
Impact on the COVID-19 pandemic on learning			
CHED's immediate closing of MHEIs due to the deflection from the standard deviation of students to be accepted			
Emerging competitors in the seafarer market			
Expenses of maritime education			
TOTAL			

2.2.5. Opportunities.

Despite the increasing global supply of seafarers, the forecasted demand would exceed the supply in the future as the world merchant fleet is expected to grow over the next ten years.[45] This is an opportunity for Philippine MET to improve recruitment and training to meet global demands. Another opportunity is the proposal to increase MARINA's budget from P20.95 to P80.69 million in 2023.[46] Equipment for assessments and train-

[35] Id. at 91, 99.

[36] MI News Network, The Philippines Continues to be the Leading Provider of Seafarers and Officers, MARINE INSIGHT, November 24, 2021, available at https://www.marineinsight.com/shipping-news/philippines-continues-to-be-the-leading-provider-of-seafarers-and-officers/ (last accessed Feb. 25, 2023).

[37] Maritime Industry Authority, MARINA Statistical Report 2017-2021, at 2, available at https://marina.gov.ph/wp-content/uploads/2022/06/2017-2021-MARINA-Statistical-Report-1.pdf (last accessed Feb. 25, 2023).

[38] Jake M. Laguador, Maritime Students' Interest towards Enrolled College Degree and Experienced Program Difficulty, in ASIA PACIFIC JOURNAL OF MARITIME EDUCATION, 48.

[39] The Seafarer's Notebook, Maritime Programs and Scholarships in the Philippines, available at https://theseafarersnotebook.wordpress.com/2019/10/08/maritime-programs-and-scholarships-in-the-philippines/#:~:text=1 (last accessed Feb. 25, 2023).

[40] Karl Garcia, Some Observations on Philippine Maritime Education, The Maritime Review, November 26, 2021, available at https://maritimereview.ph/some-observations-on-philippine-maritime-education/ (last accessed Feb. 25, 2023).

[41] Maritime Industry Authority, Supra note 13, at

[42] Id. at 78

[43] Id. at 85

[44] Id. at 103

[45] International Chamber of Shipping, Shipping and World Trade: Global Supply and Demand for Seafarers, available at https://www.ics-shipping.org/shipping-fact/shipping-and-world-trade-global-supply-and-demand-for-seafarers/ (last accessed Feb. 26, 2023)

[46] Philstar.com, Budget Increase for Maritime Industry Authority's Law Enforcement Sought, available athttps://www.philstar.com/headlines/2022/11/17/2224509/budget-increase-maritime-industry-authoritys-law-enforcement-sought (last accessed Feb. 26, 2023)

ing would be improved through additional funding. Another opportunity is the maritime scholarship fund. PMMA, together with CHED, had created a P121.5 million scholarship fund that was intended to help finance instructors and students for further studies of maritime-related fields in the Philippines and abroad.[47] However, this failed as PMMA had poor planning and execution strategies and vague spending allocations. Nonetheless, this may be an opportunity for Philippine MET if improved. An effective maritime scholarship fund program would mean that instructors and students could further their studies and offer additional knowledge and suggestions on Philippine MET. CHED has vowed to improve its PSGs concerning the curriculum of maritime education.[48] This decision was made in light of the EMSA audit as CHED aims to promote quality education and training that align with global standards, proving the said factor to be an opportunity for the Philippine maritime industry. The Philippines conducted an exchange student program with maritime schools in Japan in 2018.[49] This program allowed Japanese and Filipino maritime students to learn from each other's environments, allowing MET to broaden their experiences.

2.2.6. Threats.

Future EMSA audits are a threat because if they find the Philippine MET even more insufficient, it will have to be further restructured, and the country may be placed in an even more precarious situation. This poses a threat since it could cause disruptions to the new policies and curriculum MARINA had imposed. The COVID-19 pandemic has also harmed maritime education with simulator activities and practical training shifted to digital learning. Due to this, the application and learning outcomes of these activities have not been fully realized.[50] With the issues laid down by the EMSA regarding Philippine MHEIs, CHED has tightened its grip on monitoring the schools' compliance with global maritime standards. As a member agency of MTC-DOLE, CHED took as its last recourse the closure of deficient maritime programs of maritime schools which, after having been given ample time and opportunity, still failed to rectify the deficiencies noted by CHED and EMSA.[51] Another threat would be the emerging competitors in the seafarer market who harbor more skilled workers due to their availability and sufficiency of educational and training mediums.[52] This would lead to a decline in the demand for Filipino seafarers, consequently affecting the country's economy. Lastly, considerable expenditures needed to sustain maritime education (e.g., facilities, equipment, tools) are among the pressures driving the need for CHED to increase standard maritime tuition fees.[53]

3. Chapter Three.

3.1. Data Gathering.

The researchers partnered with a Philippine MHEI to verify EMSA's audit and apply the legal and management frameworks. Most of the data collected is based on the interview with the institution's Vice-President. All specifics of the Partner institution and contact person shall be kept strictly confidential following the research ethics clearance.

3.2. Application of Legal Framework.

The legal framework will be contextualized in terms of whether the MHEI has taken the necessary steps to ensure compliance with the legal bases. Should a specific legal basis be deemed not directly concerned with the institution's practices, it will be contextualized in terms of its general impact.

3.2.1. 1987 Philippine Constitution.

Article XII Section 14 (sustained development of national talents)

Data indicates the partner institution's compliance with this particular section of the Constitution. To observe compliance with their carrying capacity, the school only permits 80 students to receive onboard training per semester for every student to access the necessary training equipment. It also observes a maximum ratio of 1 piece of equipment per 4 students. Moreover, to ensure that there is a constant presence of funds for equipment, it requests such on an incremental basis.

Article XIII Section 3 (protection of labor)

Data shows an attempt at compliance for this provision (i.e., revisions to the curriculum), albeit an insufficient one as the Philippines is still under the threat of being "blacklisted" by EMSA due to lack of compliance with global standards. This may be attributed to the schools' capacity building and HR Development for educational administrators and faculty members.

Article XIV Sections 1, 2(1), 4(1) (promoting the importance of education)

[47] Peter Tabingo, PMMA's P121M Maritime Scholarship Fund Fails to Sail, Malaya Business Insight, April 19, 2021, available at https://malaya.com.ph/news_news/pmmas-p121m-maritime-scholarship-fund-fails-to-sail/ (last accessed Feb. 26, 2023)

[48] Dan Navarro, CHED vows improved seafarer education, Daily Tribune, April 10, 2023, available at https://tribune.net.ph/2023/04/04/ched-vows-improved-seafarer-education/

[49] NYK Line, NYK Conducts Maritime Short-term Exchange Program for Students in Japan and the Philippines, available at https://www.nyk.com/english/news/2018/20181109_01.html (last accessed Feb. 26, 2023).

[50] Ergun Demirel, Impact of Covid 19 Pandemic on Maritime Education and Training, available at https://www.researchgate.net/publication/352836776_Impact_of_Covid_19_Pandemic_on_Maritime_Education_and_Training (last accessed Feb. 26, 2023).

[51] Department of Labor and Employment, On the Closure of Non-compliant Maritime Education Programs of the Philippine Maritime Institute, available at https://www.dole.gov.ph/news/on-the-closure-of-non-compliant-maritime-education-programs-of-the-philippine-maritime-institute/ (last accessed March 5,2023).

[52] Sarwell Meniano, Pinoy seamen need upskilling to adapt to emerging technologies, Philippine News Agency, Sept. 14, 2022, available at https://www.pna.gov.ph/articles/1183681

[53] Sunstar, Ched okays tuition, other fees hike in 56 private schools, Sunstar, Jan 12, 2022, available at https://www.sunstar.com.ph/article/1917901/manila/local-news/ched-okays-tuition-other-fees-hike-in-56-private-schools

Data indicates compliance for these articles. For Sections 1 and 4(1), the number of students enrolled in maritime institutions is strictly determined by their carrying capacity. For Section 2(1), compliance is observed through the teaching and learning methods shift. For the partner institution, a content-based teacher-centered approach was originally implemented – revolving around lectures and assessments. However, in 2017, a shift to an outcome-based learning approach was implemented which essentially "liberalizes" teaching methods and styles by setting goals and objectives for MET courses to achieve.

3.2.2. Pertinent Treaties and Conventions.

The 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW).

Data shows the MHEI's compliance with 1978 STCW Convention as it has implemented programs and standards that comply with its requirements in terms of the study's focus on the second key area. The partner MHEI ensures its facilities and equipment are sufficient to cater to the students' needs. It conducts practical laboratory and simulator exercises based on learning outcomes and incorporates theoretical subjects, allowing the institution to maximize its laboratory equipment. The MHEI has also based its course syllabi, course specifications, and learning outcomes on the standards for curriculum set by the STCW, with CHED's approval.

3.2.3. Republic Acts.

Republic Act No. 10635.

This law is concerned with establishing MARINA as the governing authority over maritime education and training, it does not directly impact the partner institution's compliance with the regulations imposed in the STCW, but its current influence is insufficient. MARINA's recent reforms aimed to address the lapses of the current industry; however, due to the agency's perceived non-effectiveness in education and curriculum development, maritime institutions are left to decide independently, causing significant discrepancies that the international audit has identified.

3.2.4. Charters of MARINA.

MARINA Citizen's Charter.

This charter mainly focuses on issuing permits, regulations, and conventions to make the industry more globally competitive. This does not directly affect the status of the compliance of the partner institution regarding the standards imposed by the STCW. Thus, the MARINA Citizen's Charter has no direct influence over the compliance of our partner institution.

3.2.5. MARINA Memos and Circulars.

JCMMC No. 01, series of 2022.

This memorandum tackles CHED-MARINA's revised policies, standards, and guidelines that MHEIs must follow regarding the practical assessments and learning outcomes. The partner institution has complied with these standards set by CHED-MARINA as the institution has also affirmed that their practical laboratory and simulator exercises are based on learning outcomes. They have also enhanced their curriculum according to CHED-MARINA's standards.

JCMMC No. 03, series of 2022.

As an MHEI, the partner institution is monitored under CHED - MARINA's Annual Monitoring Program. The school's education programs are compliant with STCW standards. Although no details were given regarding CHED-MARINA's monitoring program during the interview, it is cooperative in CHED-MARINA's monitoring efforts.

3.3. Application of Management Framework.

In the application of the following matrices, the institution's current strategies were assessed based on its capability to address the identified factors. Weight is determined based on the perceived impact of the factor to the performance of MET with the score being based on the following criteria:

Score	Criteria
4	Superior
3	Above Average
2	Average
1	Poor

The overall score can range from 1 (lowest) to 4 (highest), each score indicating the following:

IFE Matrix	
Total Score	**Criteria**
<2.5	Weak Internal Position
>2.5	Strong Internal Position

EFE Matrix	
Total Score	**Criteria**
<2.5	Institution's strategies do not take advantage of opportunities and defend well against threats.
>2.5	Institution's strategies adapt well to its environment.

3.3.1. Internal Factors Evaluation Matrix.

Philippine MET IFE Matrix			
Strengths	**Weight**	**Score**	**Wtd. Score**
Large manpower count of maritime workers	0.10	4	0.40
Country location (i.e., archipelagic)	0.10	4	0.40
Number of courses for maritime education	0.10	3	0.30
Partnership between schools and shipping companies	0.08	4	0.32
Passing rate of maritime education institutions	0.08	4	0.32
Weaknesses	**Weight**	**Score**	**Wtd. Score**
Insufficient observation of safety protocols	0.12	4	0.48
Poor student to facility / personnel ratio	0.12	4	0.48
Lack of necessary practical / laboratory equipment	0.12	4	0.48
Inconsistent implementation of course materials	0.10	2	0.20
Poor monitoring systems	0.08	3	0.24
TOTAL	1.00		3.58

3.3.2. Strengths.

Large manpower count of maritime workers (4).

This is due to the Philippines being one of the top sources for maritime workers which has been made possible due to the different maritime-related degree programs for those who are interested in pursuing a career in the maritime industry.

Country location (4).

As an archipelago, the Philippines possesses several bodies of water which allows for multiple locations for schools offering MET to conduct their training sessions. Moreover, it also allows for more MHEIs to open due to the vast number of marine resources available in the country.

Number of maritime education courses offered (3).

Currently, there are only 2 Maritime courses being offered by the partner institution: BS Marine Transportation and BS Marine Engineering. Originally, it offered 3 maritime courses, but has removed the third course due to sponsoring companies pulling out the job positions, specific to the course, from its roster.

Partnership between schools and shipping companies (4).

The partner institution is partnered with many shipping companies that provide OJT, on-board training, and scholarships to its students. Moreso, these partnerships and exposures may help the students in their employability following graduation.

Passing rate of maritime education institutions (4).

The partner institution continues to produce a large number of board passers from its maritime education programs. According to the interview data, it was claimed that the institution has a passing rate of 92%-93% for first-time takers.

3.3.3. Weaknesses.

Insufficient observation of safety protocols (4).

The issue of capacity building would result in the insufficient observation of safety protocols as there would be an unequal amount of safety training due to inconsistencies. Since EMSA's audit revolves around safety, this is an indicator of the overall Philippine MET's observation of safety protocols.

Poor student to facility/personnel ratio(4).

Despite its high number of enrollees, the partner institution strictly abides by its carrying capacity to ensure compliance with the STCW's requirement regarding the maximum number of students allowed. The institution accommodates around 1,700 students despite its computed maximum being around 1,800 students.

Lack of necessary practical/laboratory equipment (4).

The partner institution has shown that it is equipped with all the necessary equipment that is required under the STCW. They have been able to ensure that they maintain the 1:4 student-to-equipment ratio, with there being instances that more equipment is available for use than the minimum requirement, achieving a better 1:3 balance.

Inconsistent implementation of course materials (2).

Data shows a shift from a content-based approach to an outcome-based approach which allows for the unification of MET due to shared goals and objectives. However, the gaps in course material implementation are shown in its inconsistency as several MHEIs focus on standardized assessments such as midterm examinations. Moreover, there is no validation for learning outcomes as the faculty is given the liberty to teach their courses, resulting in teaching inconsistencies.

Poor monitoring systems (3).

There is sufficient but not entirely effective attendance monitoring in the institution. The current system relies on a manual tallying of attendance by the class secretary, which must be signed by the professor. However, the partner school has no mitigation mechanism in case of falsified attendance due to the manual nature of the system, of which the issue of falsified attendance has been found in other maritime institutions. The audit has noticed that some students pass the course even if their absences exceed the allowed 20% of the total required attendance.

3.3.4. Overall Score (3.58).

Considering how the institution's strategies are aligned to address these factors, the group has arrived at the above overall score. The score can be described as a sufficiently satisfactory performance from the institution, as it achieved a perfect score in nearly all stated factors. However, the most apparent weakness is the inconsistent implementation of course materials, providing the institution with a concrete indicator of the direction it must take for improvement.

3.4. External Factors Evaluation Matrix.

Philippine MET EFE Matrix

Opportunities	Weight	Score	Wtd. Score
Increasing global demand for Filipino seafarers	0.20	4	0.80
Proposal to increase MARINA's budget	0.15	2	0.30
Implementing an improved maritime scholarship fund program	0.10	1	0.10
Changes in the policies, standards, and guideline of CHED on maritime educational curriculum	0.05	3	0.15
Maritime Exchange Student Programs	0.05	4	0.20
Threats	**Weight**	**Score**	**Wtd. Score**
Future EMSA Audits	0.15	4	0.60
Impact of the COVID-19 pandemic on the economy	0.15	4	0.60
CHED's immediate closing of MHEIs due to the deflection from the standard deviation of students to be accepted	0.10	4	0.40
Emerging competitors in the seafarer market	0.10	3	0.30
Expenses of Maritime Education (facilities, equipment, tools, etc.)	0.05	2	0.10
TOTAL	1.00		3.55

3.4.1. Opportunities.

Increasing global demand for Filipino seafarers (4).

The partner institution is able to structure their strategies in order to meet this opportunity of increased demand. By adhering to CHED-MARINA guidelines and improving its curriculum, it can produce graduates who can meet this demand with their 100% employability rate.

Proposal to increase MARINA's budget (2).

The potential increase in MARINA's budget will be used for MARINA operations, so the target institution will not directly benefit. However, an increased budget would mean an improved state of Philippine MHEIs since MARINA would use the money to improve compliance with international standards. Since the target institution is an MHEI, they can improve operations through MARINA directives.

Implementing an improved maritime scholarship fund program (1).

The partner institution currently has no maritime scholarship fund program that's partnered with CHED. Previously, CHED had a maritime scholarship fund program in partnership with another MHEI, but none has been offered to them as the MHEI failed to respond to the scholarship opportunity with CHED.

Changes in the policies, standards, and guidelines (PSG) of CHED on maritime educational curriculum (3).

CHED's current PSG on maritime curriculum may not be outcome-based, but the partner MHEI was able to identify the need to incorporate the projected outcomes under each course syllabus. Instead of being heavily content-based, the MHEI shifted to an outcome-based curriculum by measuring the completion of each module not by time, but by the students' accomplishment of the outcome. It was able to recognize and apply the need for an outcome-based curriculum, however, it has yet to fully align itself with the changes in CHED's PSG.

Maritime Student Exchange Programs (4).

The partner institution was able to have its own student exchange program with other local and foreign universities. Both the students and faculty are presented the opportunity to be part of the exchange programs in order to encourage growth and learning through other institutions. In turn, this can positively affect the institution as their faculty and students gain more knowledge and expertise.

3.4.2. Threats.

Future EMSA Audits (4).

Recently, EMSA declared that the Philippines has adequately passed their audit.[54] Even though the EC will continue to recognize Filipino seafarers for now, there is the threat of the Philippines failing future EMSA audits if they do not consistently align themselves to international standards. However, the partner institution is taking measures to continue fixing their standards and curriculum. The institution is also continuously reviewing their policies in accordance with MARINA's directives in order to do their part in reforming the Philippine maritime education.

Impact of the COVID-19 pandemic on learning (4).

The abrupt shift from face-to-face to remote learning has affected the students' capacity to maximize the learning experience. However, the partner institution has now shifted to the face-to-face learning setup, allowing students to experience a richer understanding of practical training through physical simulation activities aligned with the courses' learning outcomes. Moreover, the pandemic currently does not affect the execution of its course plan and curriculum.

CHED's immediate closing of MHEIs due to the deflection from the standard deviation of students to be accepted (4).

Any violation to the magna carta that CHED has passed regarding the number of students that can be accepted is a threat as any violation of this would immediately result in the closing of the MHEI. Still, there is currently no violation of such by the partner MHEI.

Emerging competitors in the seafarer market (3).

With the emerging seafarer demand in countries such as Indonesia and China, the Philippines is faced with competitors that may make the country less appealing as a source of seafarers. This would threaten the partner institution as many of their graduates would have reduced employability after graduation. However, it has mentioned that its student graduates have a 100% employability rate due to their partnerships with shipping companies that would draft these students.

Expenses of Maritime Education (facilities, equipment, tools, etc.) (2).

The partner MHEI suggested that CHED raise the standard maritime tuition fees due to incurred expenses that have been deemed costly due to the number of facilities, equipment, tools, and faculty needed to operate maritime courses. Hence, this is a threat to the partner institution.

3.4.3. Overall Score (3.55)

The total EFE score is above average, indicating that the partner institution's strategies can meet opportunities and defend against threats. However, quite a number of factors were scored 1 or 2, indicating room for improvement. The maritime scholarship fund is one opportunity that is poorly taken advantage of by the institution, to which it needs to make changes to its strategies in order to address this opportunity.

[54] Cecille Felipe, Crisis averted: 50,000 Philippine seafarers keep jobs, The Philippine Star, Apr. 2, 2023, available at https://www.philstar.com/headlines/2023/04/02/2256259/crisis-averted-50000-philippine-seafarers-keep-jobs (last accessed Apr. 11, 2023).

4. Chapter Four.

4.1. Conclusion.

4.1.1. Common Insights Between Legal and Management Framework.

Through the legal and management frameworks, the partner institution has been evaluated regarding compliance with the legal bases and readiness to address various external and internal factors in its operations. Both frameworks indicate that it is *generally compliant* with most of the identified factors. In most legal bases, the researchers observed that the MHEI had achieved *sufficient compliance*, which translated into a satisfactory overall score in both the internal and external management frameworks. However, the score gap between the external and internal management frameworks indicates that while the institution has been performing adequately internally, its external environment has yet to be addressed equivalently. This observation is also evident in the legal framework, as the factors wherein the MHEI has been found to be insufficiently compliant have an external nature regarding cause and impact, hence, a clear alignment in both frameworks. Nonetheless, its consistency in finding strategies that adequately address the compliance issues may be interpreted as a strong commitment towards sustaining its good standing as a reputable Philippine MHEI.

4.1.2. Implications for the Target Institution and Industry.

The implication on the partner institution is their room for improvement. To ensure full compliance, the institution should address shortcomings regarding internal and external factors. To ensure sustainability, they must be more stringent in their policies, including improving their current policy of giving their faculty the liberty to teach their courses which creates teaching inconsistencies. Additionally, it needs strategies to defend against external threats, such as the rising expenses of facilities and equipment. This implies the need for the institution to be more active in finding ways to combat threats and weaknesses that could affect its state. Implementing such changes would allow for sustainable operations that would benefit the institution and the industry.

Concerning the Philippine Maritime Industry, the institution's deficiency regarding external factors indicates its lack of competitiveness with global standards. Despite the EC's recent move to continue recognizing Filipino seafarer certificates, its intention to provide technical assistance to the Philippines indicates the presence of deficiencies. As one of the leading providers of maritime employees internationally, these inconsistencies could bring negative long-term implications to the industry. The lack of a scholarship fund program would prevent those who lack funds but are otherwise skilled from pursuing MET, which may subsequently impact the quality of the supply of Filipino seafarers domestically and internationally. Additionally, given the high expenses of the industry, the low budget allocated to the sector also prevents the further improvement of MET. If these external factors continue to be unresolved, this could potentially result in the Philippines being "blacklisted" in the future, which would severely impact the Philippine economy.

4.2. Recommendations.

4.2.1. The Institution.

A recommendation for the institution would be to reinstate its BS in Marine Engineering and Electro-technology (BS MEET) program. The institution previously mentioned reducing the number of maritime-related programs offered in their institution due to a partner company closing applications for the electro-engineer position. Reintroducing the program could present them with an opportunity to partner up with other companies in need of the services that require BS MEET qualifications. This helps the institution increase their student intake and the overall number of Philippine seafarers.

4.2.2. The Industry.

With the significant contribution of Filipino seafarers to the country's economy, the Philippine maritime industry must ensure its compliance with the 1978 STCW Convention, Republic Acts, and MARINA memos and circulars, including its ability to adapt to internal and external trends such as technological advancements in education and increasing maritime education expenses.[55] MARINA's audit on the country's maritime industry yielded results that pointed to a deficiency in the quality and effectiveness of Philippine MET, hence, the industry must be reformed through a development and expansion plan that covers the enhancement of safety and security training programs, digitalization and modernization of learning, and adoption of an effective and efficient maritime administration governance system.

4.2.3. Future Researchers.

With the continued growth of the maritime industry, further studies must be conducted to juxtapose current maritime programs with global standards. The findings and recommendations of this paper may not apply to the future of maritime, hence the need to stay up to date with the new changes in maritime global standards and industry. As only the second key area of the EMSA audit was tackled, it is best for future researchers to include all six key areas to provide a better overview of the sustainability and global competitiveness of the Philippine maritime industry.

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