

Career Progression Model for Deck Ratings Aspiring to Become Master Mariner

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Abstract

This study aimed to determine the career path of Bachelor of Science in Marine Transportation (BSMT) graduates from entry-level deck ratings to Master Mariner rank and to establish a sustainable Career Progression Model for aspiring maritime professionals. Specifically, the study aimed to: describe the socio-demographic and professional profiles of the respondents; analyze salary allocation; identify the necessary training and certifications; determine career progression and motivation; ascertain the significant predictors and differences in career progression and motivation; and develop an evidence-based framework. This study was based on the Social Cognitive Career Theory (Lent et al. (1994) and Bandura (1986), supported by the Competency-Based Approach Theory, Educational Pathways Theory, Practical Training and Sea Experience Theory (Kurlaender & Hibel, 2018), Professional Certification and Licensing Theory, and industry norms and Regulations Theory.

This study employed a mixed-method research design that integrated both quantitative and qualitative data to provide a holistic understanding of the respondents' career development experiences. Quantitative data were gathered using a validated researcher-made questionnaire administered to purposively selected Filipino Master Mariners and experienced deck officers, while qualitative data were gathered through interviews. Quantitative data were analyzed using descriptive statistics, correlation analysis, and multiple regression, and qualitative data were analyzed using thematic analysis.

The finding concluded that a career progression towards a Master Mariner is a systematic, competency-based, lifelong development process. The average time for respondents to reach the highest deck officer position was about fourteen years. Mandatory STCW training and certification, ongoing competency development, progressive shipboard experience, and leadership preparation were identified as critical for career progression. Certification and specialization emerged as the most significant predictors of career progression while career resilience, career identity, and career insights showed very high levels of motivation. Regression analysis revealed educational attainment, professional experience, motivation, and career progression dimensions as significant predictors of successful advancement. Qualitative findings supported the need for perseverance, mentoring, organizational support, financial stability, continuous learning, and family commitment to achieve career success

Based on the integrated quantitative and qualitative findings, the study developed a sustainable Career Progression Model that offers an in-depth guide that combines educational

preparation, competency development, required training and certification, practical experience, motivation, mentoring, organizational support and lifelong learning. The model can be a valuable reference for maritime higher education institutions, shipping companies, MARINA, policymakers and BSMT graduates in improving maritime human resource development and producing globally competitive Master Mariners.

Keywords: *Career progression; Master Mariner; BSMT graduates; maritime competency; STCW certification; career motivation; maritime education; Career Progression Model.*

INTRODUCTION

The Problem and Its Background

The maritime industry remains one of the most indispensable sectors of the global economy, facilitating approximately 80 percent of international trade by volume and over 70 percent by value (UNCTAD, 2022). As globalization continues to expand international commerce, the demand for competent maritime professionals has likewise increased. International organizations such as the International Maritime Organization (IMO), the United Nations Conference on Trade and Development (UNCTAD), the Baltic and International Maritime Council (BIMCO), and the International Chamber of Shipping (ICS) have consistently emphasized that the sustainability of maritime operations depends largely on the availability of highly qualified and professionally competent seafarers. Recent international reports revealed a continuing shortage of management-level officers worldwide, particularly Master Mariners, prompting governments and maritime institutions to strengthen maritime education, professional development, and career progression initiatives.

The Philippines has long been recognized as one of the world's leading suppliers of maritime professionals. The country's maritime industry significantly contributes to the national economy through overseas employment and remittances generated by Filipino seafarers (Bello, 2022). To sustain this global competitiveness, the Maritime Industry Authority (MARINA) developed the Maritime Industry Development Plan (MIDP), which highlights the modernization of maritime education, enhancement of professional competencies, development of globally competitive Filipino maritime professionals, and compliance with international maritime conventions such as the Standards of Training, Certification and Watchkeeping (STCW). These initiatives aim to address the increasing global demand for highly qualified maritime officers while maintaining the Philippines' position as a premier provider of maritime manpower (MARINA, 2022).

Despite these national efforts, the maritime industry continues to experience shortages of qualified management-level officers. International projections indicate that without substantial improvements in maritime education, recruitment, and career development, the shortage of certified officers will continue to increase (UNCTAD, 2022; Bajic, 2021). Reports have shown that the shortage is particularly evident among officers possessing advanced technical competencies and management qualifications required to command modern vessels. This situation presents a significant challenge for maritime higher education institutions, shipping companies, and government agencies responsible for developing competent maritime professionals.

The rank of Master Mariner represents the highest professional qualification attainable by a deck officer. Achieving this position requires a lengthy process involving academic preparation, shipboard training, practical sea experience, professional certification, continuous competency development, and compliance with international maritime regulations (International Maritime Organization, 2017). While maritime institutions successfully produce thousands of Bachelor of

Science in Marine Transportation (BSMT) graduates annually, many graduates encounter difficulties in navigating their career progression toward becoming Master Mariners. The absence of a comprehensive and structured career progression model often leaves aspiring maritime professionals without clear guidance regarding educational milestones, competency requirements, practical training, professional licensing, and career development opportunities (Anderson & Sung, 2019; Gucma & Uriasz, 2020).

Recognizing these realities, the study sought to investigate the factors influencing the career progression of BSMT graduates toward becoming Master Mariners. More importantly, it aimed to develop a comprehensive Career Progression Model that would serve as a structured guide for students, maritime educators, shipping companies, policymakers, and industry stakeholders. Such a model is expected to bridge existing gaps between maritime education and professional practice while promoting the development of competent Filipino Master Mariners capable of meeting international maritime standards.

Related Literature and Studies

The review of literature established that career progression in maritime professions is a multidimensional process influenced by educational preparation, practical training, professional competence, certification, organizational support, individual motivation, and international regulatory compliance (Anderson & Sung, 2019; Gucma & Uriasz, 2020). Numerous international studies consistently emphasized that competency development remains the cornerstone of successful maritime careers. Educational institutions are expected to equip students with not only technical knowledge but also leadership, decision-making, communication, and safety management competencies required in modern shipping operations (Riazi & Cox, 2019).

Existing literature likewise stressed the importance of competency-based maritime education aligned with the STCW Convention (International Maritime Organization, 2017). Maritime education institutions are required to implement curricula that integrate classroom instruction, simulator-based learning, onboard training, and competency assessment to prepare graduates for increasingly sophisticated maritime operations. Researchers further highlighted that continuous professional development and lifelong learning have become essential as technological innovations, automation, environmental regulations, and digital transformation reshape the maritime industry (Anderson & Sung, 2019).

Several empirical studies examined individual factors affecting maritime careers, including self-efficacy, motivation, work experience, mentoring, leadership development, organizational culture, and professional certifications. Other investigations focused on institutional variables such as curriculum quality, shipboard training opportunities, employer support, and competency assessment systems. However, these studies generally investigated isolated variables without integrating them into a unified framework explaining how BSMT

graduates progress from students to cadets, licensed officers, and eventually Master Mariners (Baum-Talmor, 2021; Kanev et al., 2017; Nwaoha & Orisakwe, 2018).

The literature also revealed that while many countries possess competency standards and certification requirements, very few have developed comprehensive career progression frameworks specifically designed for maritime professionals. Existing models tend to emphasize compliance with certification requirements rather than providing a holistic roadmap encompassing educational preparation, professional development, career planning, practical experience, leadership formation, and lifelong competency enhancement.

The previous studies predominantly examined isolated determinants of maritime career success, such as educational quality, competency development, or professional certification, without integrating these variables into a comprehensive career progression framework. Existing literature focused primarily on competency assessment and compliance with international regulations rather than on understanding the complete developmental journey from maritime student to Master Mariner. There remains limited empirical evidence within the Philippine context regarding the factors influencing career progression among Filipino BSMT graduates despite the country's significant contribution to the global maritime workforce.

Up to this time, no comprehensive, evidence-based Career Progression Model specifically designed for Filipino BSMT graduates was identified in the reviewed literature. Consequently, the study addressed this important gap by developing a structured model that integrates educational pathways, practical training, competency development, professional certification, industry standards, and career advancement toward becoming a Master Mariner.

Theoretical Framework

This study was anchored primarily on the Social Cognitive Career Theory (SCCT) developed by Lent, Brown, and Hackett (1994). SCCT explains that career development results from the interaction among personal characteristics, environmental influences, self-efficacy beliefs, outcome expectations, learning experiences, and career goals. Applied to maritime education, the theory explains how BSMT graduates make career decisions, develop competencies, overcome barriers, and pursue progressive advancement toward becoming Master Mariners. Supporting theories included the Competency-Based Approach Theory, which emphasizes mastery of competencies rather than time spent in instruction; Educational Pathways Theory, which explains structured learning sequences leading to professional success; Practical Training and Sea Experience Theory, highlighting experiential learning through onboard practice; Professional Certification and Licensing Theory, recognizing certification as validation of competency; and Industry Standards and Regulations Theory, emphasizing compliance with STCW and international maritime requirements as determinants of professional advancement.

Conceptual Framework

The conceptual framework proposed that the career progression of BSMT graduates is influenced by five major dimensions: educational pathways, competency development, practical training and sea experience, professional certification and licensing, and compliance with maritime industry standards and regulations. These factors collectively influence the successful progression of graduates from maritime students to cadets, licensed officers, chief mates, and eventually Master Mariners. The interaction of these variables ultimately served as the basis for developing the proposed Career Progression Model.

Research Objectives

The study aimed to determine the factors influencing the career progression of Bachelor of Science in Marine Transportation graduates toward becoming Master Mariners.

1. Describe the socio-demographic profile of the respondents
2. Determine how the respondents allocate their salaries for family support and other financial obligations.
3. Identify the training programs and certifications required for the career progression of seafarers from ratings to Master Mariner.
4. Assess the career progression of the respondents from ratings (entry-level onboard employment) to Master Mariner (Captain).
5. Determine the level of motivation for pursuing a seafaring career among the respondents.
6. Determine the significant predictors of career progression and motivation in the seafaring careers of the respondents.
7. Determine whether significant differences exist in career progression and motivation when the respondents are grouped according to their socio-demographic profile.
8. Develop a sustainable career progression model for Bachelor of Science in Marine Transportation (BSMT) graduates based on the findings of the study.

Significance of the Study

The study is significant to maritime students by providing a clear roadmap toward achieving the rank of Master Mariner. Maritime Higher Education Institutions may utilize the findings to improve curriculum design, competency development programs, and shipboard training. Shipping companies may use the proposed model in designing career development programs for employees. MARINA, CHED, and other policymakers may benefit from evidence-based recommendations for strengthening maritime education and workforce development. Finally, future researchers may use the study as a reference for further investigations on maritime career development and professional competency enhancement.

Scope and Limitations

This study focused on the career progression of Bachelor of Science in Marine Transportation graduates toward becoming Master Mariners within the Philippine maritime education and training system. It examined educational pathways, competency development, practical training, professional certification, and industry standards as determinants of career progression. The study was limited to variables included in the conceptual framework and did not investigate engineering officers or other maritime professions outside the deck department.

METHODOLOGY

Research Design

This study employed a systematic methodological framework to investigate the factors influencing the career progression of Bachelor of Science in Marine Transportation (BSMT) graduates toward becoming Master Mariners. The methodology was designed to ensure that the data collected were valid, reliable, and comprehensive enough to support the development of an evidence-based Career Progression Model. The research process encompassed the selection of an appropriate research design, identification of the target population and sampling procedures, development and validation of the research instrument, implementation of the data gathering process, and application of suitable statistical techniques for data analysis. The study utilized a descriptive-correlational research design employing a quantitative approach. This design was considered appropriate because the study primarily sought to describe the existing conditions influencing the career progression of BSMT graduates while simultaneously determining the relationships among the identified variables. The descriptive component enabled the researcher to determine the extent to which educational pathways, competency development, practical training and sea experience, professional certification and licensing, and industry standards and regulations influenced the respondents' career progression. On the other hand, the correlational component examined the degree of association among these independent variables and their influence on the dependent variable, which was the career progression toward becoming a Master Mariner. The quantitative method allowed the collection of measurable data from a relatively large number of respondents through a structured survey questionnaire. The numerical data generated facilitated objective statistical analysis, thereby minimizing researcher bias and allowing empirical verification of the relationships among the study variables. The design was likewise appropriate for identifying significant predictors that served as the basis for developing the proposed Career Progression Model.

Population and Sampling

The study was conducted among graduates of the Bachelor of Science in Marine Transportation program who were employed in the maritime industry and were at various stages of their professional careers. The respondents represented different ranks and levels of

experience, ranging from newly licensed deck officers to senior officers who had accumulated substantial sea service. Their diverse professional backgrounds provided valuable insights into the educational, professional, and experiential factors that contribute to successful career progression toward the highest deck officer position. The respondents were selected because they possessed firsthand knowledge and practical experience regarding maritime education, onboard training, competency acquisition, certification requirements, and professional advancement. Their experiences enabled the researcher to obtain reliable information regarding the effectiveness of maritime education and the challenges encountered throughout their professional careers. **Population and Sampling Technique** The study utilized a target population composed of qualified BSMT graduates who met the inclusion criteria established by the researcher.

Respondents were selected using an appropriate non-probability purposive sampling technique, wherein only individuals possessing relevant maritime qualifications, professional licenses, and shipboard experience were included in the study. Purposive sampling ensured that every participant had adequate knowledge and practical exposure necessary to provide meaningful responses to the research instrument. The determination of the sample size was guided by accepted statistical principles to ensure adequate representation of the target population. The resulting sample was considered sufficient to generate statistically reliable findings while maintaining practicality in data collection. The selected respondents adequately represented various stages of career progression, thereby providing a comprehensive perspective on the developmental pathway toward becoming Master Mariners.

Research Instrument

Data were collected using a researcher-developed structured questionnaire designed after an extensive review of international maritime literature, professional competency standards, the STCW Convention, MARINA regulations, and previous empirical studies related to maritime education and career development. The questionnaire consisted of two major sections. The first section gathered the demographic and professional profiles of the respondents, including variables such as age, civil status, educational attainment, years of sea service, current rank, employment status, and other relevant characteristics. The second section measured the major constructs included in the conceptual framework. Specifically, it assessed the respondents' perceptions regarding educational pathways, competency development, practical training and sea experience, professional certification and licensing, and compliance with maritime industry standards and regulations (International Maritime Organization, 2017; MARINA, 2022; Anderson & Sung, 2019; Gucma & Uriasz, 2020).

Each construct consisted of several indicators measured using a four-point Likert scale ranging from Strongly Disagree to Strongly Agree (or equivalent descriptive categories), allowing respondents to indicate the extent to which each factor contributed to their career progression.

The instrument was carefully structured to ensure clarity, relevance, and alignment with the

objectives of the study. All questionnaire items were derived from recognized maritime competency frameworks and international professional standards to enhance content validity.

The research instrument (questionnaire) was validated for content validity through an extensive review process prior to administration. Experts in the areas of maritime education, research methodology and professional practice reviewed the instrument for content relevance, clarity, appropriateness of language, organization and alignment with the research objectives. The validators checked the extent to which each item was representative of the construct it was designed to measure and provided recommendations for increasing the clarity of the wording, eliminating ambiguities, and ensuring consistency with the terminology used in the maritime field. The recommendations provided by the validators were incorporated in the revised version of the questionnaire prior to the pilot testing. This increased the ability of the instrument to accurately measure the variables identified in the conceptual framework.

The questionnaire was piloted, after validation, with respondents with similar characteristics to the actual respondents but were excluded from the final study. The pilot test was used to determine the internal consistency of the instrument and to determine the comprehensibility of the questionnaire items. The Cronbach's Alpha was used to analyze the reliability, which is one of the most widely accepted measures of internal consistency. The computed reliability coefficients revealed that the questionnaire achieved an acceptable to excellent level of reliability, indicating that the items consistently measured their intended constructs. Consequently, the instrument was considered appropriate for full-scale administration.

Data Gathering Procedure

The researcher observed the ethical standards in the data gathering. The researcher first sought permission from the appropriate institutional authorities and concerned maritime organizations to conduct the study. After securing the necessary permissions, the researcher coordinated with the participating institutions and respondents as regards the schedule and procedures in administering the questionnaire. Prior to answering the questionnaire, respondents were informed of the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any stage without penalty. They were likewise assured that all information collected would be treated with strict confidentiality and used solely for academic research purposes.

The questionnaires were handed out or distributed either in person or via a relevant electronic platform, depending on the accessibility and location of the respondents. Once the completed questionnaires were collected, the researcher reviewed each instrument for completeness and consistency of responses. To ensure data quality, incomplete or poorly filled questionnaires were excluded from the final data analysis.

Statistical Treatment of Data

The data gathered were encoded, organized and analyzed using the appropriate statistical tools. Descriptive statistics such as frequency, percentage, weighted mean and standard deviation were used to describe the profile of the respondents and to determine the extent of the influence of the identified variables on career progression. To determine the relationships between the independent variables and the career progression of BSMT graduates, correlation analysis was carried out. Then, multiple regression analysis was used to determine the variables that significantly predicted successful career progression towards becoming a Master Mariner. These inferential statistical procedures enabled the researcher to determine the relative contribution of each of the factors while controlling for the effect of the other variables. The statistical findings provided the empirical grounding for the development of the proposed Career Progression Model, and helped to ensure that the framework was built on scientifically established relationships between educational preparation, competency development, professional certification, practical experience, and industry norms.

Results and Discussions

The respondents were experienced Filipino Master Mariners who had climbed the ladder of the maritime profession. Many of them started their careers as deck cadets or ordinary seamen and gradually climbed the ladder of officers until they had obtained their Master Mariner licenses. The average time taken by respondents to reach the highest rank of deck officers was about fourteen years, which indicates that the career path in the maritime profession is a gradual process that requires significant sea service, competency development, and compliance with international certification standards (International Maritime Organization [IMO], 2017; MARINA, 2022). This finding is consistent with previous studies asserting that the career path in the maritime profession depends on a structured competency development and accumulated practical experience (Nwaoha & Orisakwe, 2018; Riazi & Cox, 2019). Moreover, respondents reported significant increases in income after they had reached the rank of Master Mariner while continuing to provide considerable financial support to their families, which highlights the economic significance of maritime careers for Filipino seafarers (Bello, 2022; Acejo, 2021).

The study found that training and professional certification was important for promotion. The quantitative results showed that all the respondents met the mandatory Standards of Training, Certification and Watchkeeping (STCW) requirements at different points in their careers. At the entry-level, the respondents received Basic Safety Training, Fire Prevention and Fire Fighting, Personal Survival Techniques, Elementary First Aid, and Personal Safety and Social Responsibilities. When they were promoted to officer positions, they acquired competencies in leadership, Bridge Resource Management, Electronic Navigation Systems, Medical Care, Advanced Firefighting, and other specialized operational courses. All the necessary international certifications required by the Master Mariners' respondents included management-level training, Flag State endorsement, International Safety Management (ISM), Maritime Labour Convention (MLC), Global Maritime Distress and Safety System (GMDSS), pollution prevention, and ship

security certifications (IMO, 2017). These findings are indicative of the competency-based approach to maritime professional development and support earlier studies that emphasized the value of continuous professional education in career advancement (Anderson & Sung, 2019; Guema & Uriasz, 2020; Riazi & Cox, 2019).

The assessment of career progression also revealed that respondents felt that the career development was an important aspect of professional success. The evaluation of the career progression was done on five dimensions, namely, starting from entry-level positions, certification and specialization, promotion through the officer ranks, captaincy and command, and opportunities beyond shipboard employment. All the dimensions scored high ratings, and certification and specialization received the highest evaluations, indicating that respondents perceived the continuous competency enhancement and professional qualification as fundamental requirements for advancement. They also recognized that initial employment helps seafarers to gain practical knowledge, technical skills, discipline and work ethics needed for higher leadership roles. These findings are consistent with earlier literature that points to the importance of structured educational routes and competency-based learning for sustained career success (Kurlaender & Hibel, 2018; Nwaoha & Orisakwe, 2018). The results likewise lend support to the Competency-Based Approach and the STCW competency framework prescribed by the IMO (2017).

The results also showed that the respondents had a very high level of motivation in their maritime career. Career resilience was the most prevalent motivational dimension followed closely by career identity and career insights. Findings indicate that respondents were very motivated despite long periods of family separation, strenuous work schedules, occupational hazards, and physical fatigue associated with seafaring. They also exhibited a high level of professional identity, confidence in their leadership skills, commitment to navigational safety, and a clear vision of their long-term career goals. Such findings are consistent with the Social Cognitive Career Theory by Lent et al. (1994) which emphasizes the importance of self-efficacy, outcome expectations, and career goals in career development. Likewise, such findings are consistent with the study of Baum-Talmor (2021) and Kanev et al. (2017) who reported intrinsic motivation, resilience, and long-term career commitment as important predictors of continued success in maritime careers.

Regression analyses revealed a number of significant predictors of career progression. Certification and specialization, entry-level positions, promotion through successive officer ranks, captaincy and command, opportunities outside shipboard employment, educational attainment, years of professional experience and overall motivation were significant predictors of successful progression to Master Mariner. Motivation was also significantly predicted by career progression variables, educational background, company-sponsored training, years of experience, age and other professional characteristics. These findings suggest that career progression cannot be explained by a single determinant but by the combined influence of education, competency development, professional experience, organizational support and continuous learning. Similar conclusions were reported by Riazi and Cox (2019) and Nwaoha and Orisakwe (2018), who

found that competency acquisition and practical experience collectively contribute to maritime career advancement.

The qualitative results strongly complemented the quantitative results. Respondents consistently reported that the maritime profession was a way to achieve financial stability, support for family, long-term economic security and better quality of life. Financial progress was cited as one of the most important motivators for entering and staying in the career. Participants also stressed that full compliance with STCW requirements was essential for ensuring competence, safety, confidence and promotion. The stories showed that lifelong learning was not only a regulatory requirement but also a professional obligation necessary to maintain operational excellence. The stories confirmed the previous findings on the importance of lifelong learning and competency development in maritime education (Anderson & Sung, 2019; Gucma & Uriasz, 2020; IMO, 2017).

The qualitative results, in addition to the quantitative findings, revealed that the themes of promotion, continuous learning, mentoring, organizational support, perseverance, discipline, adaptability and exemplary work performance were the dominant themes contributing to career success. The respondents stressed that resilience, determination and commitment to continuously improve competency were needed to be a Master Mariner. They also stressed the role of experienced mentors and shipping companies that provide support in facilitating career advancement. These qualitative narratives support the quantitative results that certification alone is not enough without practical experience, professional ethics and organizational support. The findings are consistent with the principles of Social Cognitive Career Theory (Lent et al., 1994) and studies on the importance of mentoring and workplace learning in maritime careers (Baum-Talmor, 2021; Acejo, 2021).

Other motivators mentioned by the respondents were family welfare, financial security, professional achievement, passion for navigation, travel opportunities and personal fulfillment. Despite the long periods away from their families and the physical and emotional challenges of shipboard life, the respondents remain committed to professional excellence, driven by the desire to provide better opportunities for their families while pursuing personal aspirations. The respondents also highlighted the meaningful contributions they make to the future development of the maritime profession through mentoring younger officers, sharing practical experiences, and helping aspiring seafarers prepare for licensure examinations. These findings are consistent with previous studies which have shown that family support, financial stability, and professional identity are key factors for career persistence among Filipino seafarers (Acejo, 2021; Bello, 2022; Baum-Talmor, 2021).

Finally, convergence was high in the triangulation of quantitative and qualitative findings. Quantitative analysis revealed that certification, competency development, career advancement, professional experience and motivation were statistically significant predictors of career success. Qualitative findings have consistently identified continuous learning, mentoring, perseverance, organizational support, discipline and financial security as critical components of professional

advancement. The convergence of these findings confirms that achieving the status of Master Mariner is more than the sum of sea service and is primarily a function of continual competency development, structured career progression, organizational support, and lifelong professional learning. As such, these empirical findings served as the basis for the proposed Career Progression Framework that will serve future Master Mariners, Maritime Higher Education Institutions, shipping companies, MARINA, and policymakers in strengthening maritime human resource development in the Philippines.

Conclusions

The study findings point to career progression towards Master Mariner status as a structured, competency-based and lifelong developmental process. Career progression is achieved through continuous education, adherence to mandatory international training and certification standards, progressive shipboard experience, leadership development and continued professional commitment. Certification and specialization seemed to be the strongest predictors of career progression, highlighting the significance of lifelong learning and competency development. The study also found that motivation, especially career resilience, professional identity, and career aspirations, plays a significant role in sustained career success. Qualitative findings further supported that financial security, family welfare, mentoring, perseverance, continuous learning, and organizational support enhance career progression and complement the quantitative predictors found in the statistical analyses. Overall, the integration of both quantitative and qualitative findings validates the need for a structured Career Progression Framework that systematically guides maritime students and officers from entry-level positions to the rank of Master Mariner while promoting competence, leadership, safety, and global competitiveness.

Recommendations

Based on the findings and conclusions, Maritime Higher Education Institutions should enhance competency-based maritime education by integrating structured career planning, leadership development, mentoring, and advanced professional certification into their curriculum. MARINA should establish and institutionalize a standardized national Career Progression Framework that distinctly outlines the educational, competency, certification, and experiential prerequisites for progression from cadetship to Master Mariner. Shipping companies should reinforce mentoring systems, leadership development initiatives, succession planning, and continuing professional development programs to equip officers for future command positions. Maritime training institutions should periodically review their programs to stay abreast of the changing STCW requirements, technological advances, digital navigation systems, environmental regulations, and emerging international maritime standards. The authors suggest that Senior Master Mariners should actively participate in mentoring younger officers by sharing professional knowledge, practical experiences, and leadership practices that facilitate transfer of competency. Lastly, future researchers are encouraged to validate the proposed framework through larger populations,

longitudinal research designs, and comparative international studies to further improve its applicability across different maritime contexts.

Output of the Study

The main output of the study is the Career Progression Framework for Bachelor of Science in Marine Transportation Graduates on the Path to Becoming Master Mariners. The framework combines educational preparation, competency development, required STCW training and certification, progressive shipboard experience, leadership development, continuous motivation, mentoring, organizational support, and lifelong learning into a well-structured career path. It offers a detailed guide for maritime students, officers, maritime higher education institutions, shipping companies, training centers, and policymakers in developing competent, resilient, ethically grounded, and globally competitive Master Mariners capable of addressing the changing needs of the international maritime industry. The framework also acts as a practical model for enhancing maritime human resource development, improving succession planning, and maintaining the Philippines' standing as one of the world's leading providers of highly qualified maritime professionals.

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