

Enrollment Trends and Influencing Factors in the Maritime Program at CELTECH College: Basis for Enhancing Student Recruitment and Retention Strategies

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ABSTRACT

This study examined enrollment trends and factors influencing student recruitment and retention in the Bachelor of Science in Marine Transportation and Bachelor of Science in Marine Engineering programs at CELTECH College in Olongapo City. A quantitative descriptive-correlational design was used with 276 first- to third-year maritime students selected through stratified random sampling from a population of 888. Data were gathered through a content-validated survey questionnaire with excellent internal consistency (Cronbach's $\alpha = .90$) and analyzed using frequency, percentage, weighted mean, analysis of variance, and Pearson correlation. Most respondents were 18 years old or younger (30.07%), male (85.15%), first-year students (43.12%), enrolled in Marine Transportation (61.96%), and financially supported by their families (98.19%). Enrollment

trends were rated Strongly Agree for course popularity ($M = 3.34$), guaranteed career pathway ($M = 3.40$), and maritime industry growth ($M = 3.44$). Institutional reputation ($M = 3.37$), promotional activities ($M = 3.38$), and student satisfaction ($M = 3.39$) exerted strong influence. The source ANOVA table reported differences in enrollment trends by age, year level, and program, while other profile variables were not significant. Enrollment trends and influencing factors had a strong positive relationship ($r = .719$, $p < .001$). The source contains inconsistent statistical reporting regarding gender differences in perceptions of influencing factors; this result requires verification. The CELTECH Student Engagement, Partnership, and Outreach Intervention Plan was developed to strengthen guidance counseling, school partnerships, work immersion, digital promotion, inclusion, recruitment, and retention.

Keywords: *maritime education, enrollment trends, student recruitment, student retention, institutional reputation, CELTECH College*

INTRODUCTION

Maritime transport remains fundamental to global trade and economic activity, creating continuing demand for competent officers, engineers, and other maritime professionals. Maritime education and training institutions therefore carry a strategic responsibility to attract capable students, sustain their engagement, and prepare graduates for international certification and rapidly changing industry requirements (International Maritime Organization, 2020; United Nations Conference on Trade and Development, 2023).

The Philippines is a major source of maritime labor, yet maritime programs continue to face challenges in recruitment, progression, completion, and access to shipboard training. Students may be attracted by overseas employment, financial security, travel, technology, and professional advancement, but persistence can be affected

by training costs, academic demands, practical-placement limitations, program quality, and uncertainty about career pathways (Mendoza et al., 2024; Wróbel et al., 2022).

Student choice is shaped by both personal and institutional influences. Social Cognitive Theory explains how beliefs, observed experiences, self-efficacy, and environmental support interact in decision-making (Bandura, 2001). Diffusion of Innovations Theory further explains how program awareness and acceptance spread through communication channels, social networks, and perceived program advantages (Rogers, 2003). In maritime education, institutional reputation, visible facilities, alumni outcomes, industry partnerships, and promotional communication can reinforce the perceived value of a program.

CELTECH College offers Bachelor of Science in Marine Transportation and Bachelor of Science in Marine Engineering programs in Olongapo City, near the Subic Bay maritime and logistics environment. Its location provides a relevant context for examining how students evaluate career opportunities, industry growth, academic services, practical training, and institutional image. Understanding these perceptions can support more focused recruitment and retention decisions.

This study described the profile of maritime students, assessed enrollment trends through course popularity, guaranteed career pathways, and maritime industry growth, and examined institutional reputation, promotional activities, and student satisfaction as influencing factors. It also tested profile-based differences and the relationship between the two principal variables and used the findings to develop the CELTECH Student Engagement, Partnership, and Outreach (C-SEPO) Intervention Plan.

Literature Review

Enrollment and Retention in Maritime Education

Enrollment in maritime education is connected with expectations of professional opportunity, economic mobility, international employment, and specialized technical preparation. Students often assess whether a program provides credible pathways to seafaring and shore-based careers and whether training corresponds with industry requirements (Edirisinghe et al., 2016; Pallis & Ng, 2011).

Retention is more complex than initial attraction. Progression may be affected by academic difficulty, financial pressure, access to shipboard training, training infrastructure, and the perceived realism of career expectations. Longitudinal research indicates that entrants' expectations and experiences influence whether they continue toward maritime employment (Wróbel et al., 2022).

Maritime institutions consequently need reliable profile and perception data. Differences by age, year level, program, and other characteristics may reveal groups requiring additional orientation, academic assistance, financial support, or career guidance.

Career Pathways, Industry Growth, and Practical Training

Career expectations remain a major reason students choose maritime programs. Opportunities for travel, overseas employment, professional advancement, and financial stability make maritime education attractive, although students also consider the availability of actual placements and the demands of life at sea (Lau et al., 2021; Vecchio, 2024).

Technological change has expanded the competencies expected from maritime graduates. Automation, digital systems, environmental regulation, cybersecurity, and modern ship operations require institutions to align curricula and training facilities with current practice (Miyusov et al., 2022; Weintrit, 2024). Practical exercises, simulation, and competency-based training strengthen students' confidence that the program will lead to employment (Suprapti, 2024).

Industry partnerships are important because they connect instruction with internships, work immersion, mentoring, and employment. Programs that visibly demonstrate these pathways can increase both recruitment credibility and student commitment.

Institutional Reputation and Student Satisfaction

Institutional reputation represents students' assessment of educational quality, credibility, accreditation, faculty expertise, alumni outcomes, and public image. Positive reputation can strengthen trust in the value of a degree and increase willingness to enroll and remain (Azizi & Sassen, 2023; Mateus et al., 2024).

Student satisfaction is shaped by teaching, feedback, facilities, practical learning, academic support, and the overall campus experience. In maritime education, laboratory and simulator quality are especially important because students expect applied preparation for technically demanding work (Emague, 2023; Maristela et al., 2020).

Reputation and satisfaction reinforce one another. A respected institution may attract students, but continuing retention depends on whether the actual learning environment fulfills expectations. Faculty competence, orderly facilities, practical exercises, accessible resources, and supportive services are therefore central to both institutional image and student persistence.

Promotional Activities, Outreach, and Inclusive Recruitment

Promotional activities provide prospective students with information about programs, facilities, achievements, career opportunities, and student experiences. Social media, school visits, career fairs, websites, alumni stories, and visual demonstrations of training can increase awareness and reduce uncertainty about specialized programs (Kango et al., 2021; Rajasekar & Aithal, 2022).

Maritime promotion is more persuasive when it presents authentic experiences such as simulation, internships, voyages, and graduate employment rather than relying only on general advertising. Public outreach can also address misconceptions and explain the academic, physical, financial, and professional demands of maritime education (Srividhya et al., 2025).

Inclusive recruitment is equally important because maritime education remains male-dominated. Gender-aware orientation, visible role models, supportive facilities, and equitable opportunities can widen participation and improve students' sense of belonging (Kitada et al., 2025). These considerations informed the proposed C-SEPO plan.

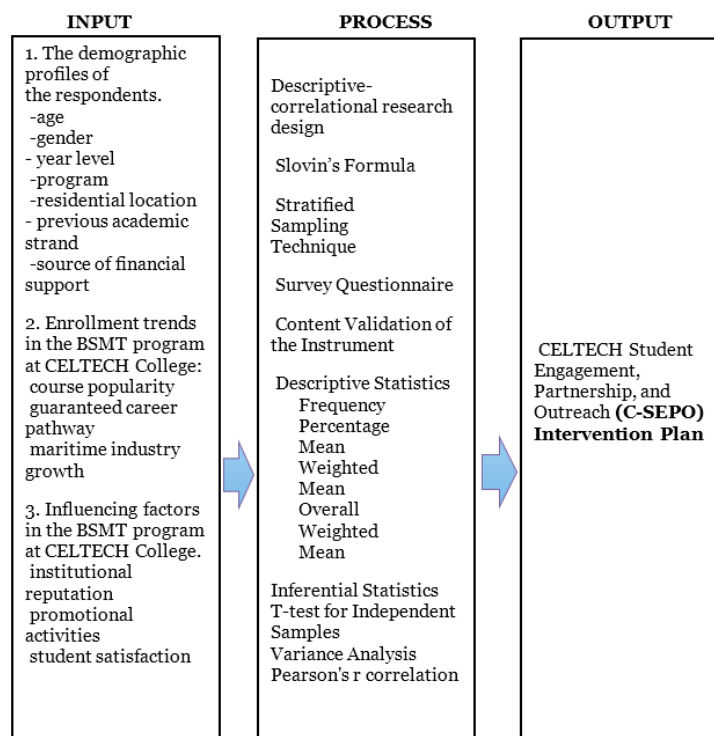


Figure 1. *Integrated theoretical and input-process-output framework of the study*

METHODS

Research Design

The study employed a quantitative descriptive-correlational design. The descriptive component summarized the students' profile, enrollment trends, and influencing factors, while the correlational component examined the association between enrollment trends and institutional reputation, promotional activities, and student satisfaction. No variables were experimentally manipulated.

Research Locale

The study was conducted at Central Luzon College of Science and Technology (CELTECH College), a private higher education institution in Olongapo City. The location is near the Subic Bay Freeport Zone and its maritime, shipping, repair, and logistics activities. The study focused on the college's Marine Transportation and Marine Engineering programs during Academic Year 2025–2026.

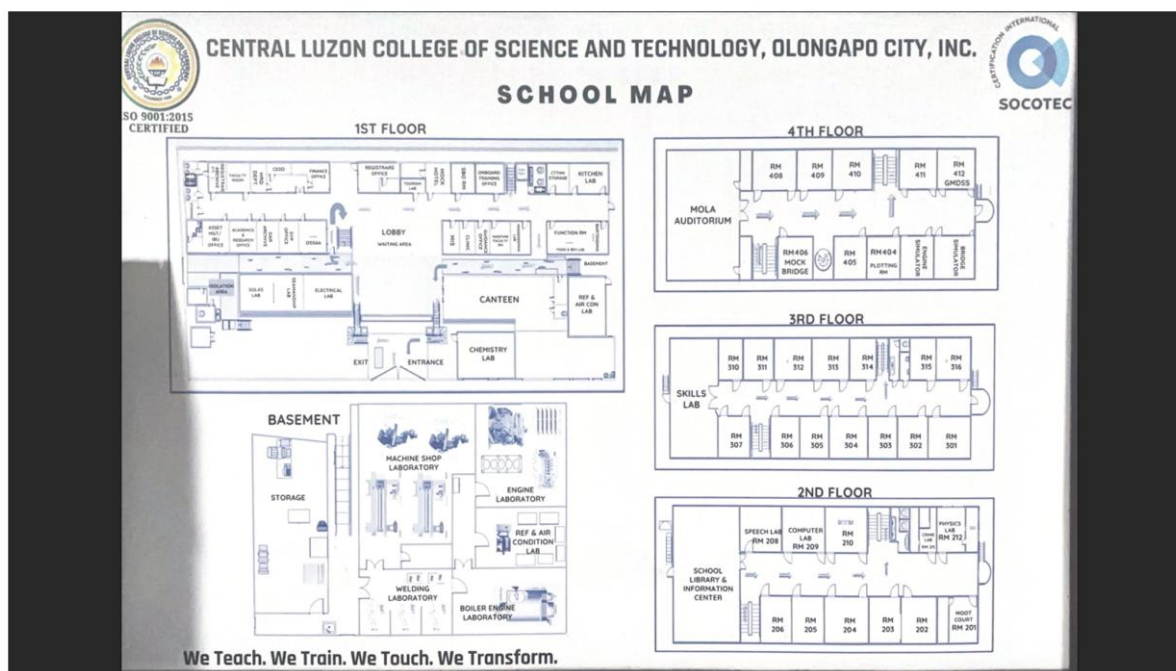


Figure 2. *CELTECH College school map*

Participants and Sampling Technique

The population comprised 888 first- to third-year maritime students. Slovin's formula with a 5% margin of error produced a target sample of 276. Stratified random sampling was used to represent year levels and the Bachelor of Science in Marine Transportation and Bachelor of Science in Marine Engineering programs proportionately. Participation was voluntary.

Research Instrument

A structured three-part survey questionnaire served as the main instrument. Part I gathered age, gender, year level, program, residential location, previous academic strand, and source of financial support. Part II measured enrollment trends through course popularity, guaranteed career pathway, and maritime industry growth. Part III measured institutional reputation, promotional activities, and student satisfaction. Perception items used a four-point Likert scale.

Validation and Reliability

The instrument was reviewed by three maritime-education and research experts for clarity, relevance, and alignment with the research questions and theoretical framework. It was pilot tested with 20 maritime students, and revisions were made based on their feedback. The final questionnaire obtained Cronbach's alpha of .90, indicating excellent internal consistency.

Data Gathering Procedure

After institutional coordination and informed consent, hard-copy questionnaires were distributed personally according to students' class schedules and available time. Quiet locations were used to reduce distractions and allow clarification of questions. Completed responses were checked, organized, tabulated, cross-verified by the research team, and prepared for statistical analysis.

Data Analysis

Frequency and percentage described the respondents' profile. Weighted means and grand means summarized the enrollment-trend and influencing-factor dimensions. Analysis of variance was used to examine profile-based differences, and Pearson product-moment correlation determined the direction and strength of the relationship between enrollment trends and influencing factors. Statistical decisions were made at the .05 level.

Ethical Consideration

Participants received information about the study and joined voluntarily. Full names were not collected, and respondents could decline to answer individual questions or withdraw. Questionnaires and encoded data were restricted to the researchers and adviser, responses were reported in aggregate, and results were presented without altering participants' answers.

RESULTS AND DISCUSSION

Profile of the Respondents

Table 1. *Selected demographic and academic profile of the respondents*

Profile Variable	Leading Category	Frequency	Percentage
Age	18 years and below	83	30.07%
	19 years	68	24.64%
	20 years	64	23.19%
Gender	Male	235	85.15%
	Female	27	9.78%
	LGBTQIA+/prefer not to say	14	5.07%
Year level	First year	119	43.12%
	Second year	79	28.62%
	Third year	78	28.26%
Program	BS Marine Transportation	171	61.96%
	BS Marine Engineering	105	38.04%
Residence	Zambales Province	143	51.81%
Previous strand	Academic-STEM	80	28.99%
Financial support	Family support	271	98.19%

The sample was concentrated among younger, male, and first-year students. Marine Transportation represented nearly two-thirds of respondents, and more than half resided in Zambales Province. Although STEM was the largest previous strand, the sample included students from diverse academic backgrounds. Family support financed almost all respondents, showing the central role of households in access to maritime education.

The larger first-year group may reflect new-student intake followed by progression and attrition across succeeding levels. The strongly male distribution also reflects the traditional gender composition of maritime education, supporting the need for inclusive outreach and gender-sensitive student support.

Enrollment Trends

Table 2. *Summary of enrollment-trend dimensions*

Dimension	Grand Mean	Interpretation	Rank
Course popularity	3.34	Strongly Agree	3
Guaranteed career pathway	3.40	Strongly Agree	2
Maritime industry growth	3.44	Strongly Agree	1

Students strongly agreed with all three enrollment-trend dimensions. Maritime industry growth ranked first ($M = 3.44$), followed by guaranteed career pathway ($M = 3.40$) and course popularity ($M = 3.34$). The highest item ratings concerned increasing overseas opportunities, continued industry growth, modern ships and technology, travel, good pay, and career advancement.

The findings indicate that students view maritime education principally as an industry-relevant pathway with international value. Program popularity is supported by career visibility and awareness, but recruitment messaging should remain realistic about training requirements, shipboard placement, and working conditions. This interpretation is consistent with research showing that career expectations and perceived employment value strongly influence maritime enrollment (Lau et al., 2021; Mendoza et al., 2024).

Factors Influencing Enrollment and Retention

Table 3. *Summary of influencing-factor dimensions*

Dimension	Grand Mean	Interpretation	Rank
Institutional reputation	3.37	Strong Influence	3
Promotional activities	3.38	Strong Influence	2
Student satisfaction	3.39	Strong Influence	1

All influencing factors exerted a strong influence. Student satisfaction ranked first ($M = 3.39$), closely followed by promotional activities ($M = 3.38$) and institutional reputation ($M = 3.37$). Clean and orderly facilities, hands-on learning, practical exercises, instructor feedback, and understanding of maritime career expectations were among the most highly rated satisfaction indicators. Experienced faculty, preparation for respected industry roles, program reputation, accreditation, and institutional history strengthened the college's image. Students also valued social-media content showing training, internships, voyages, achievements, teamwork, and officers overcoming challenges. The narrow differences among the three means show that reputation, communication, and actual student experience function together rather than independently.

Profile-Based Differences in Enrollment Trends

Table 4. *ANOVA results for enrollment trends by profile variable*

Profile Variable	F	p	Decision
Age	1.781	.004	Significant
Gender	.787	.820	Not significant
Year level	1.785	.004	Significant
Program	1.579	.020	Significant
Residential location	1.180	.224	Not significant
Previous academic strand	1.101	.322	Not significant
Source of financial support	.566	.985	Not significant

The source ANOVA table indicated significant differences by age, year level, and program. These results suggest that students' stage of development, academic progression, and chosen maritime specialization are associated with different views of enrollment trends. Gender, residence, previous strand, and financial support were not significant in the reported table.

The source Chapter V summary mentioned age and year level but omitted the significant program result reported in Table 4 ($F = 1.579$, $p = .020$). The journal article retains the numerical table result and identifies the discrepancy rather than silently removing it.

Profile-Based Differences in Influencing Factors

Table 5. *Source ANOVA table for perceptions of influencing factors*

Profile Variable	F	p	Decision
Age	.854	.732	Not significant
Gender	.787	.820	Not significant in table
Year level	.964	.543	Not significant
Program	1.156	.245	Not significant
Residential location	1.404	.057	Not significant
Previous academic strand	.716	.910	Not significant
Source of financial support	.764	.860	Not significant

The numerical values printed in the source Table 5 show no significant difference for any profile variable, including gender ($F = .787$, $p = .820$). However, the accompanying narrative and Chapter V summary state that gender was significant and provide a different result ($F = 1.500$, $p = .029$). Because the source does not provide sufficient information to determine which result is correct, this article does not resolve the contradiction. The gender finding should be checked against the original statistical output before publication.

Relationship between Enrollment Trends and Influencing Factors

Table 6. *Correlation between enrollment trends and influencing factors*

Variables	r	p	Interpretation	Decision
Enrollment trends and influencing factors	.719	< .001	Strong positive	Reject H_0

Enrollment trends and influencing factors had a strong positive and statistically significant relationship ($r = .719$, $p < .001$). Higher ratings of institutional reputation, promotional activities, and student satisfaction were associated with stronger perceptions of program popularity, career pathways, and industry growth.

The result provides an empirical basis for coordinated recruitment and retention strategies. Improving only advertising may be insufficient if facilities, practical training, faculty support, and career guidance do not meet student expectations. Conversely, high-quality experiences require visible and accurate communication to reach prospective students. The correlational design supports association but does not establish causation.

CELTECH Student Engagement, Partnership, and Outreach Intervention Plan

Table 7. *C-SEPO intervention plan*

Priority Area	Core Activities	Budget	Schedule
Guidance benchmarking	Visit selected senior high schools outside Olongapo City and Zambales; document effective counseling and recruitment practices	₱6,000	May–June 2026
External-school collaboration	Conduct follow-up meetings, maintain communication channels, and exchange guidance and recruitment practices	₱2,000	June–July 2026

MOA and work immersion	Formalize partnerships with senior high schools and provide work-immersion exposure in CELTECH facilities	₱1,500	June–August 2026
Digital promotion	Develop an official content calendar and regularly feature programs, facilities, training, and student achievements	₱1,500	April–May 2026
Inclusion and gender equity	Conduct workshops with maritime professionals on inclusive participation and gender equity in maritime careers	₱2,000	June–July 2026
Total	Integrated C-SEPO implementation	₱13,000	April–August 2026

C-SEPO combines guidance improvement, external partnerships, work immersion, digital visibility, and inclusive recruitment. Its sequencing places promotional activities before enrollment and partnership-building before and during the opening of classes. The plan directly reflects the study's strongest influences: career information, authentic program previews, institutional trust, practical exposure, and student experience.

CONCLUSION

CELTECH College maritime students viewed the programs as attractive, career-oriented, and aligned with a growing global industry. Maritime industry growth was the strongest enrollment-trend dimension, while student satisfaction was the strongest influencing factor. Institutional reputation and promotional activities were also important, showing that students respond to both the actual quality of the educational experience and the way the program is communicated.

The source ANOVA results indicated that enrollment trends varied by age, year level, and program but not by gender, residence, previous strand, or financial support. The source contains contradictory values concerning gender differences in perceptions of influencing factors; the original statistical output must be reviewed before that finding is treated as final.

The strong positive relationship between enrollment trends and influencing factors demonstrates that recruitment and retention are linked with reputation, promotion, and student satisfaction. The C-SEPO plan provides a practical framework for translating these findings into guidance benchmarking, school partnerships, work immersion, digital marketing, and inclusive outreach.

Recommendation

CELTECH College should implement C-SEPO in phases and align it with the enrollment calendar, institutional budget, and the responsibilities of the College of Maritime Education, student-services personnel, marketing staff, and partner senior high schools. Each activity should have baseline and follow-up indicators for inquiries, applications, enrollment, student participation, satisfaction, and retention.

Career orientation should clearly explain program expectations, certification requirements, practical training, shipboard pathways, overseas and shore-based careers, and emerging maritime technologies. The college should sustain faculty development, simulator and laboratory quality, student feedback systems, alumni mentoring, and industry partnerships.

Inclusive recruitment should provide gender-sensitive information, visible role models, and supportive opportunities for women and other underrepresented students. Future research should include prospective applicants, non-enrollees, students who withdrew or deferred, alumni, parents, and industry partners; use actual multi-year registrar data; and verify all inferential results directly from statistical software outputs.

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