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Pursuing Maritime Education in Digital Era: Students' Voices

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Abstract: Pursuing Maritime Education in Digital Era: Students Voices. Technology advancement shifts maritime education's focus from theoretical concepts to practical action. Therefore, this study investigated the perspectives of vocational students and the obstacles during undertaking degrees in maritime institution. It engaged 200 students from an Indonesian maritime college, which employed a mixed-method research design using closed and open-ended questionnaires. The results of quantitative data revealed students' high acceptance in pursuing maritime education, which was affected by five factors: high-qualified education, friends, practical skill, economic motif, and job availability. The qualitative data showed challenges regarding financial problems, time management, adaptation, technological development, and foreign language problems. Some possible solutions considered scholarships, having peers, being selective in joining campus activities, and improving skills and knowledge. Hence, maritime institutions should improve their qualification in the digital era. Students have to be equipped with technology-practical-based skills to become professionals in the maritime sector.

Keywords: education, maritime education, pursuing education, digital era.

Abstrak: Meraih Pendidikan Maritim di Era Digital: Persepsi Siswa. *Peningkatan teknologi mencipatakan perubahan focus pendidikan maritim dari konsep teori ke kegiatan praktek. Karena itulah penelitian ini menyelediki persepsi siswa vokasi dan tantangan yang mereka hadapi ketika menjalani pendidikan di intitusi maritim. Penelitian ini melibatkan 200 siswa dari salah satu institusi maritim di Indonesia dengan menerapkan desain penelitian metode campuran menggunakan kuesioner terbuka dan tertutup. Hasil dari kuantitatif data menunjukkan penerimaan yang tinggi para siswa dalam meraih pendidikan maritim yang dipengaruhi oleh beberapa faktor: pendidikan yang berkualitas tinggi, teman, kemampuan praktek, motif ekonomi, dan ketersediaan pekerjaan. Kemudian beberapa solusi diberikan seperti beasiswa, mempunyai teman, selektif dalam memilih kegiatan kampus, dan meningkatkan kemampuan dan ketrampilan. Karena itulah institusi pendidikan tinggi maritim seharusnya meningkatkan kualitas mereka di era digital. Para siswa seharusnya diperlengkapi dengan ketrampilan berbasis teknologi terapan untuk menjadikan mereka profesional di sektor maritim.*

Kata kunci: *pendidikan, pendidikan maritim, meraih pendidikan, era digital.*

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INTRODUCTION

As a result of advancements in technology, including the shipping system, the world has undergone significant transformations and become significantly more connected in a variety of ways in this age of accelerated globalization. Because of digitalization and high-level automation, there have been significant shifts in the way maritime businesses are operated, which has led to a reevaluation of the role that seafarers play (Demirel, 2020). The shipping industry is becoming more technical, which necessitates hiring crew members with a high level of expertise and specialization willing to welcome constantly developing technology. Therefore, the purpose of educational establishments is not solely to prepare individuals for the demands of the present but also those of the future. To enhance their teaching and learning methods, they must comprehend the impact of digitization on industry, adopt new initiatives, and take advantage of technological advancements (Krishan & Al-Rsa'I, 2023). It is also important to work closely with academic institutions and establish close ties between the business world and schools, as well as assess gaps in the educational system (Ubaedillah & Pratiwi, 2021). It is necessary to have an educational system in order to rehabilitate students' abilities to use information and comprehend the capabilities of automated systems.

An important goal of digitalization is the establishment of networks between all the various components of a given system. Connecting not only the networks but also the people is something that should be done. This implies that in addition to working on system interface and interoperability, we also need to focus on system and human interaction. Education and on-the-job experience are two of the most important factors in determining a ship's crew quality. When technological advances result in significant enhancements to preexisting transportation systems, it is imperative that crew members receive these enhancements as well (Demirel, 2020). Ziarati, Demirel, and Albayrak (2010) claimed that the innovative ideas in marine education represent a transition from a training model centered on one's information to one centered on one's abilities. The requirement for continuous professional improvement and re-certification is another factor that has brought maritime training institutions out of the darkness cast by the maritime administration and industry. In addition, demographic shifts, technological advances, and increasingly complex maritime business models have prompted a rethinking of maritime education's core curriculum with a focus on attracting a new generation of students.

Education and instruction in maritime-related subjects are essential components of a prosperous future for seafarers, their families and beloved ones, and the maritime sector in general (Baylon & Santos, 2011). The international shipping industry is always a great place to work and gain experience and exposure to different cultures. Even though there have been recent worldwide financial crises, there is still a strong need for highly skilled officers and crews to work on ships worldwide. It is still a fascinating and satisfying line of work; however, being a seafarer requires a certain set of skills, both cerebral and physical, in order to be able to cope with the difficulties that can be encountered out at sea. Additionally, seafarers' well-being and morale are crucial for their performance as maritime workers. Because of such requirements, employers needed to find employees of the highest standard who were capable of successfully responding to ongoing changes. In addition, marine careers have traditionally relied on the tacit knowledge gained through on-the-job training and experience gained while serving in a maritime context. As a result, there has been a significant rise in the number of 'practice-based' and 'professional' programs offered by

universities due to the possibility that such training will be the most straightforward and efficient way to boost productivity (Pallis & Ng, 2011).

An official maritime education provides students with invaluable chances to learn about the industry as a whole, not just the specifics of their chosen profession (Horck, 2010; Pallis & Ng, 2011). The maritime industry is becoming increasingly complicated, requiring workers with more than just technical and business expertise to keep up with the demands of new business models, supply chain integrations, and technological advancements. This is in response to the shifting global environment, which has necessitated a greater reliance on specialized, in-depth knowledge and investigation. Incorporating managerial and business abilities (such as communication, critical thinking, leadership, problem solving, teamwork, etc.) into maritime curricula is an important step toward making these programs more responsive to maritime industry requirements. Students graduate with the necessary abilities, information, and professional attitudes to succeed in the maritime sector (Lau & Ng, 2015; Manuel, 2017).

Based on this short overview, it is clear that the focus of maritime education has shifted from teaching students theoretical concepts to teaching them how to apply those concepts in actual situations in response to the needs brought about by globalization and technological development. The current tendency in maritime educational and training institutions around the world is to combine a narrowly focused vocational education with broader and more in-depth academic components that can lead to a broader and more specialized degree (Ziarati et al., 2010). Due to this tendency, the shipping industry faces some challenges in accomplishing the objectives of learning. However, the greater expectations of maritime education do not diminish students' enthusiasm for pursuing it. Conversely, there is a growing interest in pursuing a job in the maritime industry through formal education. The widespread belief that financial gain is the primary reason for students to pursue higher education ignores the fact that many skillsets are gained only through formal education (Pallis & Ng, 2011). However, this may not hold true in the case of marine education, as pursuing management credentials may serve as a primary reason for enrolling in various degree programs (Ali, 2023; Aqdas et al., 2023). Few empirical studies have been conducted to investigate the implications of the various choices to begin maritime education. This research, which aims to fill a gap in the existing literature, investigates the perspectives of vocational students and the obstacles they face when undertaking degrees in maritime education.

The general objective of this study is to investigate vocational students' voices in pursuing programs in maritime education. Specifically, the objectives are as follows:

1. To examine the students' perceptions toward pursuing a degree in maritime education.
2. To explain the challenges in pursuing maritime education.

Maritime Education

Every aspect of education needs to be placed in its societal context (a macro view) while also being analyzed for how it affects individuals, specifically in terms of their future, the degree to which their options are constrained, and the kinds of results that are considered to be pertinent to the societies in which they currently exist (a micro view) (Manuel, 2017). The critical and unquestionable role that proper education and training play in disseminating knowledge, preserving competence, facilitating essential change, responding to emerging challenges, and reducing the negative effects of actions and decisions taken in the past is undeniable. Higher education drives global, industry, and state social change (Pertiwi & Pusparini, 2021). Universities have evolved into more than just places where

conventional wisdom is challenged; they are also treasuries of society's most advanced information, be it in the "Ivory Tower" fields of pure academia or the more applied fields of business and professional practice (Zhang, 2014). In addition, one could say that a sizeable proportion of the degrees awarded by universities in the modern day are of a vocationally oriented nature, meaning that they are designed to meet the criteria, expectations, and objectives of particular occupations and fields —whether in engineering, medicine, pharmacy, architecture, management, law, human resource management, finance, and maritime affairs (Akbar & Sulistyo, 2018; Cárdenas-Moncada et al., 2020).

Historically, the maritime industry recognized that the experience, expertise, and willingness of retired seafarers were important contributors to the smooth running of their businesses (O'Neil, 2003). Learning and using practical skills has always been a primary emphasis of the conventional training for seafarers. According to the prevailing opinion, although this method addresses some cognitive abilities, it emphasizes developing practical skills needed to accomplish particular tasks. However, it has been observed that formal education places a lot of emphasis on developing critical thinking and analysis skills, which are mental abilities that rely less on practical job-oriented instruction and more on critical reading and debate. The current tendency in maritime education and training around the world is to combine a narrowly focused vocational education with broader and more in-depth academic components that can lead to a broader and more specialized degree (Demirel, 2020; Ziarati et al., 2010). As technology continues to play an increasingly important role in society, this type of training helps ensure that the maritime sector has access to highly adaptable professionals who can adapt to emerging trends in ship management.

Professional marine education programs in the present day cover the bases in terms of more generalized competencies. Employees acquire knowledge in economic evaluation and managerial skills to better adapt to the ever-evolving business environment. Stakeholders in the contemporary maritime industry need to have developed managerial and business abilities, such as the ability to make sound decisions, communicate effectively, lead effectively, and efficiently organize and implement projects. In addition, those invested in the marine industry may 'push' for these certifications in an effort to raise educational standards and boost the profession's profile (Grewal & Haugstetter, 2007). When workers have higher levels of education, their employers and the general public are more likely to support increased wages and improved working conditions. This is particularly true for occupational groups that have historically placed a strong emphasis on apprenticeship. The maritime initiatives vary in specifics, but they all have the same overarching goal: to improve the maritime industries' "professional" reputation (Pallis & Ng, 2011).

Education in Digital Era

Since the introduction of new technologies, there has been a dramatic shift in the classroom, and teachers now must incorporate these tools into their lessons (Shariq, 2020). These days, ICT is seen as a possible resource for expanding educational possibilities. It has the potential to teach students the skills necessary to thrive in today's information society, including fluency in digital media, strong interpersonal skills, and increased output (Aguh et al., 2023; Pratiwi et al., 2023). Alkamel and Chouthaiwale (2018) stated that by providing tangible possibilities for personalized instruction, ICT has the potential to improve education by making the material more dynamic, interactive, and engaging. It is often

argued that in today's digital era, learners can acquire knowledge about anything at any moment using information and communication technologies. Furthermore, numerous studies have demonstrated that the use of ICT tools has an advantageous impact on students' behavior and motivation, allowing for more independent learning (Pratiwi & Ubaedillah, 2021; Srisermbhok, 2020; Suwantarathip, 2019).

One of the most pervasive aspects of the modern global world is technology, and this is especially true in the realm of education, which is experiencing a period of unprecedented invention (Lencastre et al., 2020). There are some universal features of digitalization: the availability of massive data, data mining to make use of massive data repositories, artificial intelligence (AI) to aid in decision-making, a high degree of automation, and super quick online data transmission. The rise of technology has permeated every aspect of modern life and has also created exciting new possibilities for pedagogy and learning in the classroom. The growing abundance of technological advancements in the world gives rise to new issues in the field of education. In contrast, simultaneously, it gives rise to demands that educational institutions take the initiative in leading knowledge communities (Jr & Pogoy, 2023; Pratiwi et al., 2022). After establishing the obvious connection between technological advancement and innovation, some argue that the relationship between technology and teaching is also crucial and must be taken into account when reorganizing and reorienting educational institutions and programs. Widespread reports on the benefits of incorporating technology into the classroom suggest that implementation of new approaches necessitates the development of collaborative cultures, the improvement of pedagogical and technological training for educators, and the promotion of digital literacy among students instead of additional technological assistance from institutions is needed if a long-term commitment to innovation is to be achieved (Ahmed et al., 2020; Khoshnevisan, 2019; Pratiwi et al., 2023; Waluyo, 2020).

Recent studies have concentrated on the benefits of using digital SRS (Student Response Systems) to instantly collect and analyze student responses in the classroom (Anggoro & Khasanah, 2022; Pratiwi & Ubaedillah, 2021; Rofiah & Waluyo, 2020; Ulla & Espique, 2022; Waluyo & Bakoko, 2021; Wong, 2016). The results of these studies show that SRS is useful for boosting student interest in and participation in class and fostering higher levels of autonomy among students. For instance, Pratiwi and Ubaedillah (2021) implemented several two SRS applications in vocational classrooms: Kahoot! and Socrative. Based on the findings of a quasi-experimental study, it can be concluded that students' learning outcomes for vocational students improved due to the digital class and that students provided favorable feedback about their experiences learning via digital platforms. In the same vein, Waluyo and Bakoko (2021) validated the benefits of SRS with Quizlet for student learning, including increased autonomy for learners. However, students at a Thai university report concerns about cheating when using SRS during exams (Rofiah & Waluyo, 2020). Since cheating does not improve learning results when using SRS for testing, it is recommended that educators make students aware of the repercussions of engaging in such behavior.

METHODS

Participants

This study uses a purposive sampling method to recruit participants. Purposive sampling accentuates the selection of research participants based on specific questions and objectives of the study, as well as available information on the study's participants (Creswell, 2018). The inclusion criteria that represented the major goal

of this study were selected using the purposive sampling method. Henceforth, two criteria are selected: participants must be vocational maritime students; participants must understand the study's objectives and be willing to participate. After conducting the purposive sampling method, this study engages 200 students from 1st, 2nd, 3rd, and 4th year Politeknik Ilmu Pelayaran Semarang students. Each grade of students is taken 50 students. The participants are between the ages of 18 and 23.

Research Design and Procedures

This study employed a mixed-method research design involving quantitative which was followed by qualitative phase to answer the research questions. The quantitative phase was used to measure students' perception on pursuing maritime education, while the qualitative phase was used to gather students' insight toward challenges and alternative solutions during the process of their study in maritime education institutions. The last part was the triangulation to analyze quantitative and qualitative results to find out conclusion and recommendation of this study.

Instrument

A questionnaire survey is conducted on the intended study participants. The survey is in

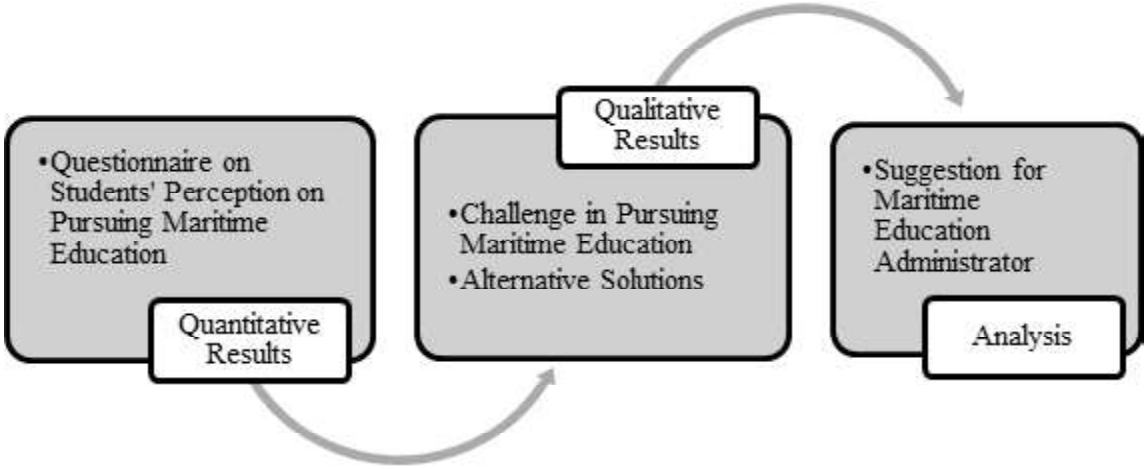

Figure 1. Research design

closed-ended and open-ended form to get a comprehensive perspective from the students (Table 3.1). The closed-ended questionnaire is a Likert-scale questionnaire to collect students' perceptions of pursuing higher education in maritime vocational polytechnic. The responses range from 1 to 5, where "1" was strongly disagree and "5" strongly agree. The survey consists of 5 indicators divided into 14 questions: job availability, high-quality institutions, practical skill, economic motif, and friends which were created referring to Lau and Ng (2015) and Pallis and Ng (2011). At the same time, the closed-ended questionnaire is about students' challenges in pursuing higher education in the vocational maritime polytechnic. Students are given 2 questions about their challenges and efforts that have been made to overcome the challenges during their time in pursuing higher education in the maritime sector.

Table 1. Questionnaire

Closed-Ended Questionnaire						
No	**Factors**	**1**	**2**	**3**	**4**	**5**
	Job Availability					
1	Department/faculty has a good network with industries.					
2	Higher chance of getting a job					
3	I want to be associated with my country's maritime tradition.					
	High-Quality Institution					
4	Great interest in providing courses					
5	Program accreditation by professional units					
6	High quality of teaching staff					
7	Enhance knowledge about maritime industries.					
8	High quality of supporting facilities of the institution					
9	Successfully admitted to the program with academic performance.					
	Practical Skill					
10	Course are practice-oriented					
11	Internship availability					
	Economic Motif					
12	Affordable tuition fee					
13	Higher earnings in maritime industries than others					
14	Chance to secure a scholarship					
	Friends					
15	Friends also enrolled in the program.					
	Open-Ended Questionnaire					
1	What are the challenges in pursuing your higher education in the maritime sector?					
2	What have you done to overcome the challenge?					

Data Analysis

The data analysis attempted to disclose descriptions of students' perceptions and challenges in pursuing maritime education in the digital era. Apart from providing descriptive and inferential statistics results, this study also presents the effect size for each analysis for practical guidance. To answer the three research questions, quantitative and qualitative data analysis were employed, as the following:

Quantitative Analysis: Descriptive statistics analysis of the questionnaire results (mean, standard deviation, normality tests) was conducted to analyze closed-ended questionnaires to answer research questions 1 and 2. This will be supported with a Paired Sample t-test analysis to explain the comparison of vocational students' perceptions toward pursuing maritime education in the digital era.

Qualitative Analysis: It employs thematic analysis, in which the data are detected, analyzed, and reported based on themes. This study used a deductive approach for coding and structuring the open-ended questionnaire results to generate themes. The emphasis was based on the students' challenges in pursuing maritime education.

■ RESULTS AND DISCUSSION

Quantitative Results

Descriptive statistics were conducted on questionnaire results to find out the mean, standard deviation, and normality of the data. The data were categorized into 5 factors: job availability, high-quality institution, practical skill, economic

motif, and friends. The lowest result was 1 (strongly disagree), while the highest response was 5 (strongly agree). Generally, the mean ranged from 4.09 (*SD* = .84) to 4.33 (*SD* = .67). It meant that the students pursued maritime education in the digital era based on the 5 factors altogether. Further, the data were distributed normally based on the values of *Skewness* and *Kurtosis* between -2 and +2 for all items (*Skewness* = -.36 to 1.16; *Kurtosis* = -.21 to 1.85). Therefore, the data could be examined in a paired-sample t-test to analyze the students' perception of pursuing maritime education.

Table 2. Descriptive statistics

Item	Min	Max	Mean	SD	Skewness		Kurtosis	
					Statistic	SE	Statistic	SE
1	1.00	5.00	4.09	.84	-1.06	.17	1.65	.33
2	1.00	5.00	4.19	.84	-1.16	.17	1.8	.33
3	1.00	5.00	4.11	.80	-1.00	.17	1.85	.33
4	3.00	5.00	4.33	.67	-.52	.17	-.74	.33
5	3.00	5.00	4.25	.71	-.43	.17	-.98	.33
6	3.00	5.00	4.27	.66	-.37	.17	-.75	.33
7	3.00	5.00	4.31	.64	-.39	.17	-.69	.33
8	3.00	5.00	4.31	.68	-.51	.17	-.81	.33
9	2.00	5.00	4.26	.72	-.62	.17	-.34	.33
10	2.00	5.00	4.14	.76	-.39	.17	-.76	.33
11	3.00	5.00	4.28	.69	-.45	.17	-.86	.33
12	2.00	5.00	4.25	.72	-.57	.17	-.33	.33
13	3.00	5.00	4.23	.70	-.36	.17	-.93	.33
14	2.00	5.00	4.16	.75	-.56	.17	-.21	.33
15	3.00	5.00	4.26	.71	-.43	.17	-.95	.33

Comparing students' perception toward the academic year, the results showed similar results toward maritime education across years (*N* = 204; *M* = 4.24; *SD* = .74). The average response of the 1st year students was 4.28 (*N* = 60; *SD* = .85) with the minimum point was 3.95 (*SD* = 1.09) and the maximum point was 4.45 (*SD* = .74). The average of 2nd year students was 4.17 (*N* = 66; *SD* = .60) with the minimum point was 3.96 (*SD* = .63) and maximum point was 4.24 (*SD* = .49). The average of 3rd year students was 4.26 (*N* = 78; *SD* = .74) with the minimum point was 4.10 (*SD* = .84) and maximum point was 4.35 (*SD* = .66). It meant that throughout academic years, the students' belief to pursue maritime education were related and all factors influenced each other.

Table 3. Students' attitude by academic year (*N* = 204)

Item	1st year (*N* = 60)		2nd year (*N* = 66)		3rd year (*N* = 78)	
	Mean	SD	Mean	SD	Mean	SD
1	3.95	1.09	4.22	.52	4.10	.84
2	4.16	1.12	4.15	.66	4.25	.74
3	4.10	1.02	4.10	.70	4.14	.71
4	4.45	.74	4.27	.56	4.30	.68
5	4.41	.74	4.00	.70	4.35	.66

6	4.28	.78	4.24	.49	4.30	.68
7	4.36	.80	4.21	.48	4.35	.62
8	4.41	.80	4.18	.52	4.35	.70
9	4.28	.78	4.24	.55	4.28	.82
10	4.30	.78	3.96	.63	4.17	.81
11	4.41	.76	4.15	.61	4.30	.68
12	4.31	.79	4.21	.59	4.23	.77
13	4.30	.78	4.21	.59	4.20	.72
14	4.16	.74	4.15	.61	4.17	.87
15	4.23	.81	4.21	.59	4.33	.73
Total	4.28	.85	4.17	.60	4.26	.74

Considering factors affecting students in pursuing maritime education (Figure 1), the graph showed that they generally considered choosing a high-quality institution to continue their maritime education ($M = 4.3$) as the highest factor. It was followed by friends who enrolled in the same maritime academic program ($M = 4.26$). Then, practical skills that the students got during the process of learning and economic motif, including tuition fees, higher earnings at maritime works, and the chance for getting a scholarship, were the next factors affecting students in pursuing maritime education ($M = 4.22$). The last factor, job availability, had the lowest point ($M = 4.14$), yet it is still categorized as a positive perception toward maritime education.

Across academic years, high-quality institutions perceived the highest positive rank from 1st-year students ($M = 4.37$), followed by 3rd-year students ($M = 4.33$) and 2nd-year students ($M = 4.19$). Friends factor hinted at the highest positive rank from 3rd year students ($M = 4.33$), followed by 1st year students ($M = 4.23$) and 2nd year students ($M = 4.21$). The practical skill factor got the highest positive rank from 1st-year students ($M = 4.36$), followed by 3rd-year students ($M = 4.24$) and 1st-year students ($M = 4.06$). Economic motif affected positively toward 1st-year students ($M = 4.26$), 3rd-year students ($M = 4.21$), and 2nd-year students ($M = 4.19$), while job availability factor affected positively toward 3rd-year students ($M = 4.17$), 2nd-year students ($M = 4.16$), and 1st-year students ($M = 4.07$). The results showed that across academic years, the students showed a positive attitude toward pursuing maritime education based on the five factors: high-quality institution, friends, practical skills, economic motif, and job availability. The factors that affected 1st-year students' choices to continue maritime education sequentially: high-quality institutions, practical skill, economic motif, friends, and job availability. For the 2nd year students, the affected factors were friends, economic motifs, high-quality institutions, job availability, and practical skills. For the 3rd year students, the affected factors gradually were high-quality institutions, friends, practical skills, economic motif, and job availability.

Comparing the students' perceptions of pursuing maritime education across academic years, all results showed no significant differences with very low correlation and no effect size (see Table 4.3). Among 1st year students and all students, there was no significant difference in students' perceptions with very low correlation and no effect size ($t(65) = -1.04$; $Sig = .30$; $r = .03$; $d = -.13$). Among 2nd-year students and all students, there was no significant difference in students' perceptions with very low correlation and no effect size ($t(77) = -.02$; $Sig = .98$; $r = -.11$; $d = .00$). Following the 1st and 2nd-year comparison, among 3rd-year students and all

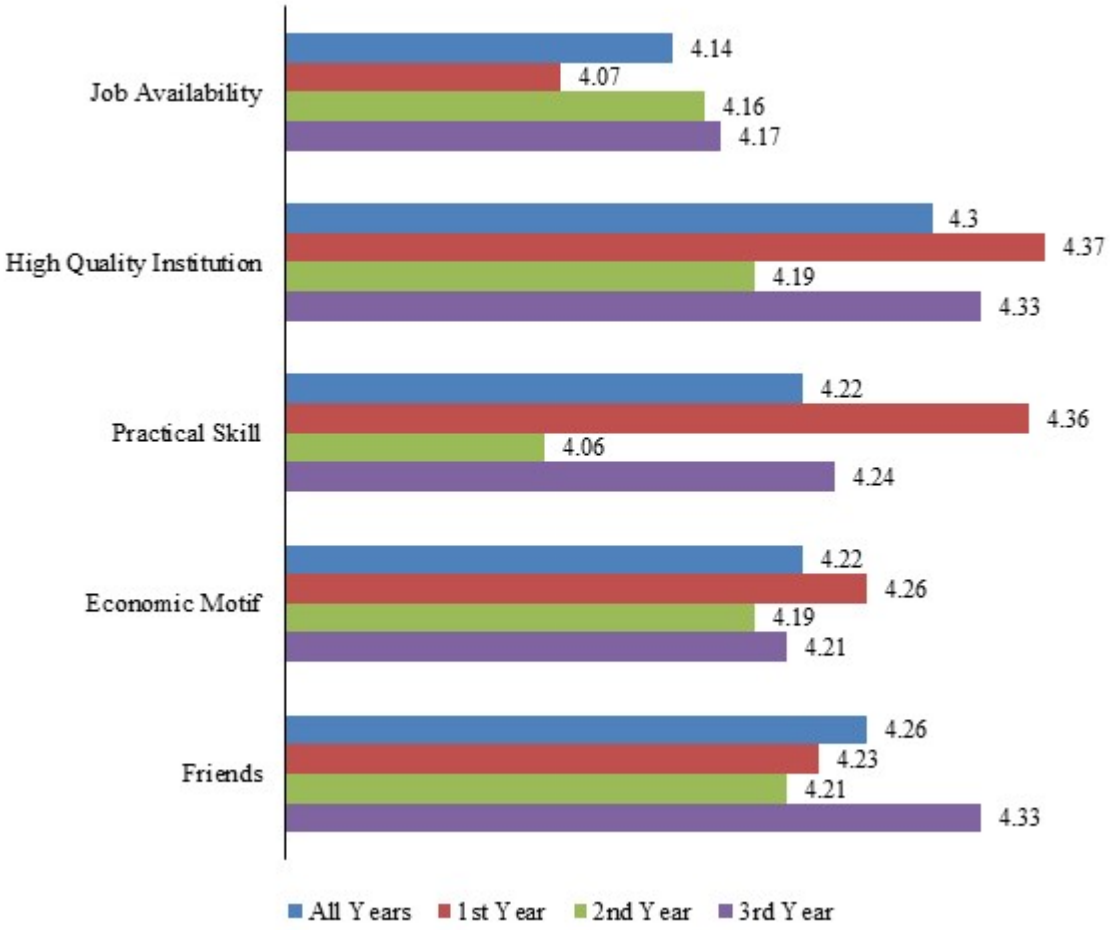

Figure 2. Students' perception throughout the years

students, there was also no significant difference in students' perceptions with very low correlation and no effect size (t (59) = .75; *Sig* = .45; r = .00; d = -.). These results indicated that students' perceptions toward pursuing maritime education had no significant difference, which meant that their perceptions were similar. However, the similar perceptions had no correlation and no effect size.

Furthermore, between 1st and 2nd-year students' perception in pursuing maritime education, there was no significant difference in students' perceptions with very low correlation and no effect size (t (59) = .75; *Sig* = .45; r = -.00; d = .09). Between 1st and 3rd-year students' perception in pursuing maritime education, there was no significant difference in students' perceptions with very low correlation and no effect size (t (59) = -.07; *Sig* = .93; r = -.14; d = -.01). Between 2nd and 3rd year students' perception in pursuing maritime education, there was no significant difference in students' perceptions with very low correlation and no effect size (t (65) = -.98; *Sig* = .32; r = -.09; d = .11). In line with the perceptions among students, the comparison of students' perceptions across academic year had no significant difference with no correlation and no effect size. This meant that the students' perceptions did not affect across the academic year (1st, 2nd, and 3rd-year students).

Table 4. Paired sample t-test

Pair	Paired Differences					t	df	Sig. (2-tailed)	r	d
	M	SD	SE Mean	95% Confidence Interval of the Difference						
				Lower	Upper					
1st – 2nd	.08	.89	.11	-.14	.32	.75	59	.45	-.00	.09
1st – 3rd	-.01	1.03	.13	-.27	.25	-.07	59	.93	-.14	-.01
2nd – 3rd	-.09	.79	.09	-.29	.09	-.98	65	.32	-.09	-.11
1st – all	-.11	.86	.10	-.32	.10	-1.04	65	.30	.03	-.13
2nd – all	-.00	.98	.11	-.22	.22	-.02	77	.98	-.11	.00
3rd – all	.08	.89	.11	-.14	.32	.75	59	.45	-.00	.09

In the digital era, students consider high-quality institutions the main factor in choosing maritime education. The high-quality institution is regarded to drive global worlds and state social change (Pertiwi & Pusparini, 2021). Thus, maritime institutions have to combine a narrowly focused vocational education with broader and more in-depth academic components that can lead to a broader and more specialized degree (Ziarati et al., 2010). The second factor is friends. Joh (2019) argued that students with more exposure to peer feedback activities tended to more favorably appreciate its beneficial impact, especially on learning achievement. It means that peers or friends positively impact various aspects of learning. Therefore, many students follow their friends in continuing their higher education.

Furthermore, practical skill and economic motif factors have the same point in this study. Practical skills enable professionals to improve their productivity in their workplace because practical work familiarizes students with the tools and equipment they will be required to use. Instead, practical skills also promote experiential and self-learning. This is in line with the study from Pallis and Ng (2011), which stated that there has been a significant rise in the number of 'practice-based' and 'professional' programs offered by universities due to the possibility that such training will be the most straightforward and efficient way to boost productivity. Further, they argued that the maritime initiatives vary in specifics, but they all have the same overarching goal: to improve the maritime industries' "professional" reputation. Considering the economic motif, it is related to affordable tuition fees, the chance to get a scholarship and higher earnings working in the maritime sector. Hence, maritime institutions have to acknowledge students' needs in pursuing maritime education.

The last factor is job availability. Although there is a high demand for workers and seafarers in the maritime industry, the students consider this factor the last factor affecting them in choosing maritime education institutions. It is believed that careers within the global maritime industry offer a wealth of opportunities and provide mariners with the education, training, and experience for a lifetime of rewarding challenges, whether at sea or ashore, in the longer term (Demirel, 2020). Therefore, the students feel confident about job availability in the maritime sector. They thought that they had to choose a highly qualified maritime institution that equipped them with practical skills so that they could be ready to fulfill the demands of maritime stakeholders.

Qualitative Results

Despite the students' high acceptance in pursuing maritime education, there were some challenges that they needed to encounter. Before joining a maritime institution, some students

struggled with the tuition fee since many practice-based activities required financial support. Later, after they entered maritime education, they had to adapt to the maritime education system, which required all students to be disciplined and obey the institution's regulations. Adaptation with maritime knowledge and foreign language acquisition were other challenges that most students had to bear in mind. Specifically, the language problem was more about skill in public speaking as a seafarer. It was very important to support their workplace performance to collaborate well and have fluent communication with their team. In addition, technology development in the digital era has become another problem. It digitally changed some works in the maritime sector through machines, reducing job availability. Also, digital maritime knowledge should be improved and developed to support world development. Further, some minor challenges, such as being far from home that made the students miss their families, and time management between academic and non-academic activities were other issues.

Question: What are the challenges in pursuing your higher education in the maritime sector? (You can answer in English or Bahasa Indonesia.)

S1: We have to follow the institutional rule
S2: Higher technology reduces job opportunity
S3: Knowledge about maritime and English language
S4: How to collaborate well and communicate with others, especially having a good attitude, improving my skills, and learning an international language.
S5: The development of technology
S6: Far from home
S7: How to manage my time for doing academic and non-academic activity

The last result of this study was about the possible solutions to challenges the students encountered in pursuing maritime education. Regarding the financial problem, the students could get scholarships inside or outside the institution to help parents pay tuition fees. If a student had already accepted, adaptation to maritime institution regulations had to be done. Good relations with peers could help remind each other about the regulations that had to be obeyed. Instead, peers could also benefit from practicing foreign languages to acquire faster as language could be learnt faster if practiced. Considering the technological development problem, one should remember that technology always brings pros and cons. Yet, people have to follow technological development to be attached to the world, including students in maritime education. It was suggested to improve skills and create a good relationship with stakeholders to larger the opportunity in the maritime area. Last but not least, maritime students working in the maritime sector had to always keep in touch with their families and adapt quickly to their environment in adjusting to new places or teams. These aspects would support them in gaining successful careers in the maritime sector.

Question: What have you done to overcome the challenge?

S1: Remind each other about institutional regulation and discipline
S2: Always implement the applicable rules and regulations
S3: Improve the skills and make a good relationship. Also, try to find a lot of chance
S4: Keep in touch regularly
S5: Take some scholarship to get additional cost
S6: I always study maritime science to adapt to the maritime sector and practice it.
S7: Start to adjust to all the circumstances that exist on campus

Triangulation

The primary focus of this study is to know students' perceptions of pursuing maritime

education in the digital era. Since the world has been growing into society 5.0, the concept of maritime education has also shifted into more practical and applicable technical knowledge that integrates technology during the operation system. It has affected maritime education with a higher demand of stakeholders' needs, so the education system has to be transformed within the digital era. The changes, then, affect students' pursuing their education in the maritime sector. In the past, it was believed that students continued their education in the maritime sector due to economic motifs (Pallis & Ng, 2011). However, this study reveals that the concept is not true due to the world's development through globalization. Other factors that motivate students to pursue maritime education in the digital era include high-quality institutions, friends, practical skills, economic motifs, and job availability.

Nonetheless, there are some challenges that the students encounter in pursuing maritime education. For instance, financial problems, adaptation to the maritime education system, foreign language acquisition, and technological development. They have to deal with all those problems in order to succeed in graduating from the maritime institution and working in the maritime sector as their goal. Therefore, some possible solutions are offered, such as finding scholarships, having good peers to help in faster adaptation and practicing a foreign language, and following technological development by improving skills and knowledge with technology integration.

■ CONCLUSIONS

The findings revealed students' high acceptance in pursuing maritime education. Five factors promote their perception of joining maritime institutions: 1) high-qualified education, 2) friends, 3) practical skill, 4) economic motif, and 5) job availability. However, some challenges arise in maritime education regarding financial problem, time management, adaptation, technological development, and foreign language problems. This study offers some possible solutions, such as scholarships, having peers, being selective in joining campus activities, and improving skills and knowledge. Hence, maritime education institutions have to upgrade their qualification. In this digital era, the main factor in choosing a maritime institution is a high-quality institution that offers practical skills more than theoretical knowledge inside the class. In the fast technological development, students have to be equipped with technology-practical-based skills to make them professional in the maritime sector. This issue should also concern maritime education policymakers and stakeholders unless the students are left over with world development.

As much as this study intends to offer, it has some limitations that have to be acknowledged. This study only uses a sample from one public maritime institution, which could not be generalized to other institutions, and the different numbers of participants from each year might also influence the results of the study. Future research is suggested to use samples from various maritime institutions with a purposive sampling method so that the number of participants could be the same. To sum up, the main purpose of this study has been answered. The findings and analysis have been discussed.

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