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Impact of maritime education on HRM: insights from STIP Jakarta graduates

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ABSTRACT

This research examines management practices in Marketing, Innovation, and Technology within Maritime Affairs, focusing on graduates of the Maritime Institute Jakarta (STIP Jakarta). By qualitatively analyzing the perspectives of 70 officers, including deck and engine officers and shipping professionals, the study reveals key insights. It highlights the importance of digital marketing, continuous improvement, and technology adoption in enhancing competitiveness and operational efficiency within the maritime industry. Furthermore, it emphasizes professionalism and adherence to international standards such as the IMO-STCW, demonstrating the industry's dedication to safety, competency, and regulatory compliance. The results emphasize the interdependence of effective management practices, regulatory adherence, and professional growth, providing practical insights for industry practitioners, policymakers, and training institutions to navigate maritime management complexities effectively.



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Introduction

The maritime industry serves as a fundamental pillar of global trade, facilitating the movement of goods and fostering economic development worldwide (Comtois & Slack, 2017; de la Peña Zarzuelo et al., 2020). In this dynamic sector, human resource management (HRM) plays a crucial role in ensuring the efficiency, safety, and sustainability of maritime operations. With the maritime landscape evolving due to technological advancements, regulatory shifts, and changing market dynamics, there is a growing demand for skilled professionals capable of navigating these complexities (Svilicic et al., 2019). Maritime education institutions are thus tasked with preparing future maritime professionals with the knowledge, skills, and competencies needed to excel in this ever-changing environment (Ferritto, 2016; Kidd & McCarthy, 2019). One such institution leading in maritime education is the Maritime Institute Jakarta (STIP Jakarta), recognized for its international program and commitment to producing highly skilled seafarers, deck officers, and engine officers. STIP Jakarta aims to cultivate internationally competent maritime professionals through its applied bachelor's degrees in Nautical, Technical, and Port and Shipping Management majors. With a curriculum aligned with international standards set by the International Maritime Organization (IMO), STIP Jakarta prepares its graduates for the challenges and opportunities within the global maritime industry (Balkin, 2006; IMO, 2018).

This research seeks to explore the impact of maritime education on HRM practices through an in-depth examination of the experiences and perspectives of graduates from STIP Jakarta. By focusing on the narratives

of 70 officers who have undergone training at the institute, encompassing deck officers, engine officers, and shipping professionals, this study aims to shed light on the role of maritime education in shaping HRM competencies within the maritime workforce (Albayrak & Ziarati, 2012; Neilson & Rossiter, 2013). Through qualitative research methodology and descriptive analysis, the research delves into various facets of HRM, including recruitment, training, performance appraisal, and career development, from the vantage point of STIP Jakarta graduates. The rationale for undertaking this research stems from the imperative to bridge the gap between academic theory and practical application within the realm of maritime HRM. While theoretical frameworks abound in the field of HRM, their translation into effective practices within the maritime context remains an area warranting further exploration (Fei, 2018). By engaging directly with maritime professionals who have undergone training at STIP Jakarta, this research seeks to elucidate the ways in which educational experiences shape perceptions, attitudes, and practices relating to HRM within the maritime sector (Fey & Björkman, 2017).

Moreover, this research holds implications for educational policy and practice within maritime institutions, offering insights into the alignment between educational curricula and industry requirements. As the maritime industry continues to evolve in response to emerging challenges such as digitalisation, environmental sustainability, and workforce diversification, the role of maritime education in equipping professionals with adaptive HRM skills becomes increasingly salient. By identifying areas of strength and areas for improvement within the educational framework at STIP Jakarta, this research aims to inform strategic interventions aimed at enhancing HRM competencies among future generations of maritime professionals. This research contributes to the burgeoning literature on maritime education and HRM by providing empirical insights drawn from the experiences of graduates from STIP Jakarta. By elucidating the interplay between educational experiences and HRM practices within the maritime context, the study offers valuable contributions to both academic scholarship and practical industry applications (Berg, 2013). Through a nuanced understanding of the factors shaping HRM within the maritime sector, this research seeks to facilitate informed decision-making and policy development aimed at fostering a skilled, competent, and resilient maritime workforce capable of navigating the complexities of the 21st-century maritime industry.

Literature Review

The literature surrounding maritime education and human resource management (HRM) within the maritime industry encompasses a diverse array of perspectives, theories, and empirical studies aimed at elucidating the complexities inherent in preparing and managing a skilled maritime workforce (Berg, 2013; Fei, 2018). At the intersection of these two domains lies a critical nexus wherein educational institutions, regulatory bodies, and industry stakeholders converge to shape the competencies, attitudes, and practices of maritime professionals. This literature review synthesises key themes and results from existing scholarship, providing a comprehensive overview of the theoretical frameworks, empirical research, and practical implications pertinent to the research inquiry at hand (Behdad & Thomas, 2014; Bennett & Royle, 2016). Central to the discourse on maritime education is the concept of competency-based training, which underscores the importance of aligning educational curricula with industry requirements to ensure the attainment of requisite skills and knowledge among graduates (Mazaheri et al., 2014). Competency-based approaches to maritime education emphasise the acquisition of practical, hands-on skills alongside theoretical knowledge, thereby preparing graduates for the multifaceted demands of the maritime profession. Within this paradigm, institutions such as the Maritime Institute Jakarta (STIP Jakarta) play a pivotal role in shaping the competencies of future maritime professionals through structured training programmes grounded in international standards set forth by regulatory bodies such as the International Maritime Organization (IMO) (Christodoulou-Varotsi & Pentsov, 2008; House & Saeed, 2016).

Moreover, the literature highlights the evolving nature of HRM practices within the maritime sector, driven by factors such as technological advancements, regulatory changes, and shifting market dynamics. Traditional models of HRM, characterised by hierarchical structures and bureaucratic processes, are increasingly giving way to more agile, flexible approaches that prioritise talent development, employee engagement, and organisational agility (Watson, 1999). Within this context, maritime education institutions are tasked with not only imparting technical skills but also fostering a culture of continuous learning, adaptability, and innovation among their graduates. One salient theme within the literature pertains to the role of educational institutions in facilitating the transition from classroom learning to real-world application within the maritime industry (Cicek et al., 2019). While theoretical knowledge forms the foundation of maritime education, practical experience and experiential learning are equally essential for developing the requisite skills and competencies needed for success in the field. As such, educational programmes must strike a balance between theoretical instruction and hands-on training, providing students with opportunities to apply their knowledge in simulated or real-life scenarios. Furthermore, the literature underscores the importance of industry-academic partnerships in

bridging the gap between educational theory and industry practice within the maritime sector. Collaborative initiatives between educational institutions, industry stakeholders, and regulatory bodies serve to ensure the relevance, currency, and effectiveness of educational programmes in meeting the evolving needs of the maritime workforce. By fostering dialogue, knowledge exchange, and mutual understanding, such partnerships enable educational institutions to stay abreast of industry trends, technological innovations, and regulatory requirements, thereby enhancing the employability and competitiveness of their graduates.

The literature highlights the critical role of regulatory frameworks, such as the Standards of Training, Certification, and Watchkeeping (STCW) convention, in shaping HRM practices within the maritime industry (Comtois & Slack, 2017; Munim et al., 2020; Zaderei, 2020). Mandated by the IMO, the STCW convention sets forth minimum training and certification standards for seafarers, establishing a common baseline of competencies and qualifications across international borders. Compliance with STCW requirements not only ensures the safety, security, and efficiency of maritime operations but also standardises HRM practices related to recruitment, training, certification, and career development within the industry. The literature review underscores the multifaceted nature of maritime education and HRM within the maritime industry, highlighting the interplay between educational theory, industry practice, and regulatory frameworks in shaping the competencies, attitudes, and practices of maritime professionals. By synthesising key themes and results from existing scholarship, this review provides a robust foundation for the empirical investigation of the impact of maritime education on HRM practices among graduates from Maritime Institute Jakarta (STIP Jakarta).

Method

This study employs a qualitative research approach to explore the impact of maritime education on human resource management (HRM) practices among graduates of Maritime Institute Jakarta (STIP Jakarta). Qualitative research is chosen for its ability to delve into the subjective experiences, perceptions, and meanings attributed to phenomena, allowing for a nuanced understanding of the research topic. By engaging directly with participants and eliciting rich, detailed insights, qualitative research facilitates the exploration of complex social phenomena within their natural contexts (Darlington & Scott, 2020; Yilmaz, 2013). Participants in this study comprise 70 officers who are graduates or alumna of STIP Jakarta, representing diverse backgrounds and specialisations within the maritime industry. The sample includes deck officers, engine officers, and shipping professionals, encompassing a broad spectrum of roles and responsibilities within the maritime workforce. By purposively selecting participants with firsthand experience of maritime education at STIP Jakarta, the study aims to capture a comprehensive range of perspectives on the intersection of education and HRM within the maritime sector (Autsadee et al., 2023). Data collection is primarily conducted through in-depth interviews, allowing participants to articulate their experiences, perceptions, and insights regarding HRM practices within the maritime industry. Semi-structured interview protocols are developed to guide the conversation while allowing for flexibility and spontaneity in participants' responses (Yilmaz, 2013). The interview questions are designed to explore various aspects of HRM, including recruitment processes, training programmes, performance appraisal systems, career development opportunities, and the perceived impact of maritime education on professional practice. Furthermore, thematic analysis is employed as the primary method of data analysis, enabling the identification, interpretation, and organisation of patterns and themes within the qualitative data. Following the transcription of interview recordings, the data are systematically coded and categorised based on recurring themes, concepts, and narratives. Through iterative coding and constant comparison, themes emerge organically, reflecting the richness and complexity of participants' experiences and perspectives. Moreover, triangulation is employed as a strategy to enhance the credibility and validity of the results (Kapanadze, 2019). Triangulation involves the use of multiple data sources, methods, and perspectives to corroborate and validate the research results. In addition to interviews, supplementary data sources such as archival records, documents, and observational notes may be utilised to provide additional insights and contextual information. By triangulating data from multiple sources, the study seeks to mitigate potential biases and enhance the reliability and robustness of the results.

Results and Discussions

Results

Valuable insights into the impact of maritime education on human resource management (HRM)

The results of the research provide valuable insights into the impact of maritime education on human resource management (HRM) practices among graduates of Maritime Institute Jakarta (STIP Jakarta). Through

qualitative analysis of in-depth interviews with 70 officers, including deck officers, engine officers, and shipping professionals, several key themes and patterns emerged, shedding light on the intersection of education and HRM within the maritime industry. The results are presented below, accompanied by comprehensive tables and percentages to elucidate and contextualise the data.

Table 1. Demographic Profile of Participants

Demographic Variable	Frequency	Percentage
Deck Officers	30	42.9%
Engine Officers	25	35.7%
Shipping Professionals	15	21.4%
Total	70	100%

The demographic profile of participants reveals a diverse representation of roles within the maritime workforce, with deck officers comprising the largest proportion (42.9%), followed by engine officers (35.7%) and shipping professionals (21.4%).

Table 2. Themes Emerging from Interviews

Themes	Frequency	Percentage
Importance of Education	45	64.3%
HRM Practices	55	78.6%
Impact on Career	35	50.0%
Training and Development	40	57.1%
Compliance with Standards	30	42.9%
Total	205	100%

The thematic analysis of interview data revealed several recurring themes, with HRM practices (78.6%) and the importance of education (64.3%) emerging as predominant areas of discussion among participants. Other notable themes include the impact of education on career trajectories (50.0%), training and development opportunities (57.1%), and compliance with international standards (42.9%).

Table 3. Perceptions of HRM Practices

HRM Practices	Positive (%)	Neutral (%)	Negative (%)
Recruitment	60 (85.7%)	8 (11.4%)	2 (2.9%)
Training and Development	50 (71.4%)	15 (21.4%)	5 (7.1%)
Performance Appraisal	40 (57.1%)	20 (28.6%)	10 (14.3%)
Career Development	55 (78.6%)	10 (14.3%)	5 (7.1%)

Participants' perceptions of HRM practices within the maritime industry were largely positive, with the majority expressing satisfaction with recruitment processes (85.7%), training and development opportunities (71.4%), performance appraisal systems (57.1%), and career development initiatives (78.6%).

Table 4. Impact of Education on HRM Practices

Impact	Positive (%)	Neutral (%)	Negative (%)
Recruitment	40 (57.1%)	20 (28.6%)	10 (14.3%)
Training and Development	55 (78.6%)	10 (14.3%)	5 (7.1%)
Performance Appraisal	50 (71.4%)	15 (21.4%)	5 (7.1%)
Career Development	45 (64.3%)	20 (28.6%)	5 (7.1%)

Participants overwhelmingly attributed a positive impact of maritime education on HRM practices, with the majority acknowledging the role of education in enhancing recruitment processes (57.1%), training and development initiatives (78.6%), performance appraisal systems (71.4%), and career development opportunities (64.3%).

Table 5. Compliance with International Standards

Compliance	Yes (%)	No (%)
STCW Convention	60 (85.7%)	10 (14.3%)
International Best Practices	55 (78.6%)	15 (21.4%)
Total	115 (82.1%)	25 (17.9%)

The majority of participants reported compliance with international standards such as the Standards of Training, Certification, and Watchkeeping (STCW) convention (85.7%) and international best practices in HRM (78.6%), reflecting the alignment of educational programmes at STIP Jakarta with global industry standards. The results of the research underscore the positive impact of maritime education on HRM practices within the maritime industry, with participants acknowledging the role of education in enhancing recruitment processes, training and development initiatives, performance appraisal systems, and career development opportunities. Additionally, the results highlight the importance of compliance with international standards and best practices in HRM, indicating the alignment of educational programmes at STIP Jakarta with global industry standards.

The alignment between maritime education

The second phase of the research delves deeper into the alignment between maritime education at Maritime Institute Jakarta (STIP Jakarta) and the standards set forth by the International Maritime Organization's Standards of Training, Certification, and Watchkeeping (IMO-STCW). Through qualitative analysis of participant interviews and supplementary data sources, this section aims to elucidate the extent to which educational programmes at STIP Jakarta meet the needs and professionalism standards of the maritime industry as prescribed by IMO-STCW.

Table 6. Perception of Alignment with IMO-STCW Standards

Alignment with IMO-STCW Standards	Yes (%)	No (%)
Curriculum Design	65 (92.9%)	5 (7.1%)
Practical Training	60 (85.7%)	10 (14.3%)
Certification and Qualification	70 (100%)	0
Total	195 (92.9%)	15 (7.1%)

The results reveal a high degree of alignment between educational programmes at STIP Jakarta and IMO-STCW standards, with participants overwhelmingly endorsing the alignment of curriculum design (92.9%), practical training (85.7%), and certification and qualification processes (100%) with the prescribed standards. This indicates the institution's commitment to preparing graduates for the professional demands and expectations outlined by IMO-STCW.

Analysis: The results corroborate and strengthen the first set of results, which underscored the positive impact of maritime education on HRM practices within the maritime industry. By demonstrating the alignment between educational programmes at STIP Jakarta and the standards set forth by IMO-STCW, the second set of results provides further support for the notion that maritime education plays a crucial role in shaping HRM competencies among graduates. Furthermore, the high level of alignment with IMO-STCW standards reflects the responsiveness of STIP Jakarta to the evolving needs and professionalism standards of the maritime industry. By ensuring that curriculum design, practical training, and certification processes adhere to international standards, STIP Jakarta equips graduates with the requisite skills, knowledge, and qualifications to excel in their respective roles within the maritime workforce. Moreover, the results underscore the importance of regulatory compliance and standardisation within the maritime education sector. By adhering to IMO-STCW standards, educational institutions such as STIP Jakarta contribute to the harmonisation and standardisation of maritime education and training on a global scale. This not only enhances the quality and consistency of maritime education but also facilitates the mobility and interoperability of maritime professionals across international borders. The second set of results provides robust empirical evidence of the alignment between maritime education at STIP Jakarta and the standards prescribed by IMO-STCW. By meeting the needs and professionalism standards of the maritime industry, STIP Jakarta plays a vital role in preparing graduates for successful careers in the global maritime workforce. These results not only complement the first set of results but also underscore the pivotal role of maritime education in shaping HRM practices and professionalism within the maritime industry in accordance with international standards.

The results of the research offer valuable insights into the intersection of maritime education and human resource management (HRM) practices within the maritime industry, with a particular focus on graduates of Maritime Institute Jakarta (STIP Jakarta). The discussion synthesises the key results from the study, providing a comprehensive analysis of the implications for maritime education, HRM practices, and professionalism within the maritime sector.

Alignment with International Standards

The research results underscore the high degree of alignment between educational programmes at STIP Jakarta and the standards set forth by the International Maritime Organization's Standards of Training,

Certification, and Watchkeeping (IMO-STCW)(Christodoulou-Varotsi & Pentsov, 2008; Guitton, 2015). Participants overwhelmingly endorsed the alignment of curriculum design, practical training, and certification processes with IMO-STCW standards, reflecting the institution's commitment to preparing graduates for the professional demands and expectations outlined by international regulatory bodies. This alignment with international standards holds significant implications for the quality, relevance, and credibility of maritime education at STIP Jakarta. By ensuring compliance with IMO-STCW standards, the institution not only enhances the employability and competitiveness of its graduates but also fosters a culture of professionalism, safety, and adherence to best practices within the maritime workforce (Balcita & Palaoag, 2020; Mankabady, 1986). Moreover, the alignment with international standards facilitates the recognition and mobility of STIP Jakarta graduates across national and international boundaries, thereby enhancing their opportunities for career advancement and professional development within the global maritime industry.

The results also highlight the importance of regulatory compliance and standardisation within the maritime education sector. By adhering to IMO-STCW standards, STIP Jakarta contributes to the harmonisation and standardisation of maritime education and training on a global scale. This not only ensures consistency and coherence in educational practices but also facilitates the mutual recognition of qualifications and certifications among maritime professionals worldwide. Consequently, graduates of STIP Jakarta emerge as globally competent and qualified professionals, capable of meeting the diverse and evolving needs of the maritime industry in accordance with international standards.

Impact on HRM Practices

The research results also shed light on the impact of maritime education on HRM practices within the maritime industry (Mandaraka-Sheppard, 2014; Svilicic et al., 2019). Participants overwhelmingly acknowledged the positive influence of education on various HRM processes, including recruitment, training and development, performance appraisal, and career development. The majority of participants expressed satisfaction with the recruitment processes, training and development opportunities, performance appraisal systems, and career development initiatives facilitated by their education at STIP Jakarta. The positive impact of maritime education on HRM practices can be attributed to several factors. Firstly, the rigorous and comprehensive curriculum at STIP Jakarta equips graduates with the technical knowledge, practical skills, and professional competencies needed to excel in their respective roles within the maritime workforce. Through a combination of classroom instruction, practical training, and industry exposure, graduates are prepared to meet the demands and challenges of the maritime industry with confidence and competence. Moreover, the emphasis on professionalism, safety, and compliance instilled through maritime education at STIP Jakarta cultivates a culture of excellence and accountability within the maritime workforce. Graduates are not only equipped with the technical skills and knowledge but also imbued with the values and ethics essential for effective HRM practices within the maritime sector (Autsadee et al., 2023). This combination of technical expertise and professional integrity positions graduates of STIP Jakarta as valuable assets to employers, capable of contributing positively to organisational performance and success. Furthermore, the alignment of maritime education with international standards such as IMO-STCW ensures that graduates are well-versed in the latest industry regulations, practices, and standards governing HRM within the maritime sector. By incorporating international best practices and standards into educational curricula, STIP Jakarta equips graduates with a global perspective and a solid foundation for navigating the complexities of the maritime industry with professionalism and proficiency.

The research results underscore the critical role of maritime education in shaping HRM practices and professionalism within the maritime industry. The high degree of alignment between educational programmes at STIP Jakarta and international standards such as IMO-STCW reflects the institution's commitment to excellence, quality, and relevance in maritime education. Moreover, the positive impact of maritime education on HRM practices highlights the transformative potential of education in equipping graduates with the skills, knowledge, and competencies needed to succeed in the global maritime workforce. Moving forward, it is essential for maritime education institutions, industry stakeholders, and regulatory bodies to continue collaborating and innovating to ensure the continued relevance and effectiveness of maritime education and HRM practices. By fostering a culture of continuous learning, adaptation, and excellence, the maritime industry can address emerging challenges and seize opportunities for growth and development in the 21st century and beyond. Through strategic investments in education, training, and professional development, the maritime sector can cultivate a skilled, competent, and resilient workforce capable of driving innovation, sustainability, and prosperity in the global maritime industry.

Conclusions

The research has provided valuable insights into the intersection of maritime education, human resource management (HRM) practices, and professionalism within the maritime industry, with a particular focus on graduates of Maritime Institute Jakarta (STIP Jakarta). Through qualitative analysis of participant interviews and supplementary data sources, the study has illuminated the role of maritime education in shaping HRM competencies, adherence to international standards, and professionalism among graduates. The results underscore the high degree of alignment between educational programmes at STIP Jakarta and the standards prescribed by the International Maritime Organization's Standards of Training, Certification, and Watchkeeping (IMO-STCW). Participants overwhelmingly endorsed the alignment of curriculum design, practical training, and certification processes with IMO-STCW standards, reflecting the institution's commitment to preparing graduates for the professional demands and expectations outlined by international regulatory bodies.

Moreover, the research results highlight the positive impact of maritime education on HRM practices within the maritime industry. Participants expressed satisfaction with recruitment processes, training and development opportunities, performance appraisal systems, and career development initiatives facilitated by their education at STIP Jakarta. This underscores the transformative potential of education in equipping graduates with the skills, knowledge, and competencies needed to succeed in the global maritime workforce. Moving forward, it is imperative for maritime education institutions, industry stakeholders, and regulatory bodies to continue collaborating and innovating to ensure the continued relevance and effectiveness of maritime education and HRM practices. By fostering a culture of continuous learning, adaptation, and excellence, the maritime industry can address emerging challenges and seize opportunities for growth and development in the 21st century and beyond. Through strategic investments in education, training, and professional development, the maritime sector can cultivate a skilled, competent, and resilient workforce capable of driving innovation, sustainability, and prosperity in the global maritime industry.

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