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Management of Maritime Human Resources in Belawan to Create a Social Creative and Innovative Society in The 4.0 Technology Era

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Abstract

The industrial revolution 4.0 is a condition where there are very significant changes in industrial processes carried out by humans. Digital technology's rapid development in the industrial sector, which has accelerated industrial processes, is a defining feature of this shift. The available Human Resources (HR) must, on the other hand, be able to adapt to these changes in order to keep up with global competition in the industrial world because the industrial revolution has replaced human labor. The capital available in Indonesian ports is sufficient to implement industry 4.0. Preparing human resources through secondary and higher education is the first step in developing national capability in maritime education, followed by mastery and application of marine science and technology. This capability can be realized by increasing research and development capacity and providing scholarships for maritime technical schools. The existence of Belawan Port will have a significant impact on aspects of the community's socioeconomic life as a result of the increasing visibility of its activities. The advancement of these local area exercises can't be isolated from the effect of port exercises..

Key words: *Maritime, Human Resources, Technology 4.0*

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INTRODUCTION

Indonesia is a nation of islands with more land area than ocean. Indonesia is geographically situated between two oceans and two continents and is home to a significant quantity of natural resources. Indonesia ought to be referred to as a maritime nation because it is an archipelagic nation. Sadly, however, Indonesia's maritime nickname was deemed inappropriate. This is primarily because Indonesia's development paradigm has been dominated by the mainland for several decades. Consequently, the development gap between the mainland and the ocean is so obvious (Kadar, 2015). A maritime nation is one that makes the most of its sea area for shipping in general. Countries that are maritime examples include: China, Panama, England, Singapore, and the United States. Because they manage the development of their marine waters in a serious, comprehensive, planned, and sustainable manner, these nations are referred to as maritime nations. The Indonesian nation has prevailed in maritime matters, according to facts and historical background. It is documented that several Indonesian kingdoms, including the Sriwijaya Kingdom, Majapahit, Demak, Bone, and others, were known as maritime rulers. Even in Madagascar, historical facts can be found in traces (Kadar, 2015). The English word maritime, which means navigation, maritime, or sea, is the root of the word maritime. The term "maritime power," also known as "oceanic state," emerged from this word. The Big Indonesian Dictionary defines maritime as "relating to the sea" in terms of shipping and maritime commerce. The quality or nature that exemplifies mastery of the sea is referred to as maritime in English. Maritime is a noun and maritime is an adjective from a grammatical standpoint. Therefore, the term maritime is more appropriate for describing Indonesia as a nation that relies on the sea. Indonesia must not only become a maritime nation but also a maritime nation. It is argued that a maritime nation is a state that exploits the sea for national glory, whereas a maritime nation demonstrates more of its physical condition, i.e., nations that are related to, close to, or consist of seas. Based on the broad meaning of the word, marine may be more likely to be interpreted as a container, specifically as a vast salty area of water that covers the earth's surface. Just look at the physical sea and all of its natural resources. As

a result, the term "maritime" actually encompasses more than just the physical sea, its container, and its contents. It also encompasses the sea's geopolitical context, particularly Indonesia's position as a crossbreeding area between two continents and two oceans, making it an important sea area for international trade. (Straubhaar et al., 2015) say that it's helpful to think of technological change as a social revolution brought on by technological advancements. Beginning with the community that existed before farming and was characterized by a culture of speech or oral traditions (spoken words). At the time of henna, the community grouped together and lived off of hunting and farming. Notwithstanding, a shift happens when devices are found to track down fish (fshing), gather wood in the backwoods (logging), to removing minerals (mining) meaningfully impact the manner in which people connect. The oral tradition becomes a reading tradition at this point. The practice of reading is still very exclusive to Catholic clergy and has not spread to the general public. The reading tradition was previously restricted to a smaller number of people who were able to read concepts or ideas prior to the industrial revolution's mass production of the printing press. When people are able to consume and produce messages using digital technology, the shift occurs once more. This stage marks a significant shift in how humans interact with one another; because the internet, a highly interactive medium created by digital technology, The spoken exchange of information has been replaced by written communication thanks to the internet. According to (Straubhaar et al., 2015), the internet era is an information society in which people spend more time behind computers and convert media into written form that can be read by computers. In this interactive media, the written form allows for a different understanding of the real world. The emergence of a shift in individual attitudes and actions is one fact. In this day and age, with the rapid development of increasingly sophisticated technology, each individual must be able to utilize all of their human resources to support our performance, which will have a significant impact on daily tasks. In order for an organization to grow in accordance with its human resources, even its facilities and infrastructure system can continue to develop and improve over time. With the competence of each employee, high-quality human resources,

according to many experts, will determine an organization's success or failure. It takes a long time, a process, and unstoppable efforts to create such an apparatus. Science, technology, and information are evolving at a faster rate than in previous years. Because it is required, technology's role has also grown in importance in various ways. System technology information, for instance, is used to exchange information. Humans are one of the company's most important resources because they act as a driving force. As a result, the company is obligated to provide appropriate and timely salaries, benefits, and bonuses to employees in recognition of their effort, consideration, and time. This is done with the intention of demonstrating the company's loyalty and inspiring the employees of the company to continue working productively at his job. According to the Fourth Industrial Revolution, the world has undergone four stages of revolution: 1) The steam engine was invented in the 18th century, allowing goods to be produced in large quantities; 2) Electricity was used in the 19th and 20th centuries, lowering production costs; 3) Computers were used in Revolution Industry 3.0 in the 1970s; and 4) Intelligence engineering and the internet of things served as the foundation for the movement and connectivity of humans and machines in Revolution Industry 4.0 in the 2010s. The way people think, live, and interact with one another has been fundamentally altered by the fourth industrial revolution. This era will cause a variety of human activities to be disrupted in a variety of fields, not just technological but also economic, social, and political. It has been observed how the presence of taxis and online motorcycle taxis has affected the transportation service sector in the economic sector. The same holds true for the political and social spheres. Because of the ease with which technology and the internet can be accessed, social interaction is no longer restricted. The same thing took place in politics. People's behavior has changed as a result of the ease of digital access. Movements based on social media that propagate a particular political ideology now provide a means of collecting political action. The condition known as the "industrial revolution 4.0" is one in which human-operated industrial processes undergo extremely significant transformations. Digital technology's rapid development in the industrial sector, which has

accelerated industrial processes, is a defining feature of this shift. The available Human Resources (HR) must, on the other hand, be able to adapt to these changes in order to keep up with global competition in the industrial world because the industrial revolution has replaced human labor. Indonesia is now in the era of the 4.0 industrial revolution, in which information technology plays a significant role in daily life (Prasetyo & Trisyanti, 2018). Everything becomes unlimited and is accessible at any time, from any location. Digital technology and the internet, both of which are rapidly expanding, significantly support human relationships and movement. As a result, human interaction is no longer constrained by space or time. Each individual is required to explore his or her potential in accordance with the needs of the time given the rapid development of technology. However, this unrestricted access ought to be viewed with suspicion, criticism, or constant inquiry. Accepting everything that occurs in the world will make us into creatures who lack self-control and environmental control. Indonesia is in the midst of the fourth industrial revolution, also known as Industrial Revolution 4.0, which aims to boost national industry productivity and competitiveness (Lase, 2019). Automation and digitization are hallmarks of the industrial revolution 4.0. This will have a significant impact on Indonesia's industrial future. The fact that many Indonesian workers continue to rely solely on their own self-taught abilities is one of many causes of the delay in the development of human resources. In addition, only a small number of creative industry training and education institutions are capable of producing a professional workforce with worldwide recognition. In order to deal with the 4.0 industrial revolution, all parties must take at least three factors into account. First and foremost, quality, specifically the production of high-quality human resources to meet the requirements of the digital technology-based job market. Second, there is the issue of quantity, which is producing a sufficient number of qualified and competent human resources to meet the industry's requirements. The distribution of high-quality human resources, which is still uneven, is the third issue. According to the government's announcement, human resources (HR) are thought to be the primary factor supporting the implementation of

industrial revolution 4.0. Especially when you consider that the digital age of today necessitates the skills of human resources. People who are proficient in the application of digital technology are the kind of human resources that the industry requires right now. This skill is the ability to implement smart factories like the Internet of Things (IoT). Human labor will not be diminished or replaced by industry 4.0 implementation. Instead, it can help human resources become more knowledgeable about how to use the most recent industrial technology. Almost all industries expect automation to encourage their business, including the port industry. The shift to smart supply chains and ports as a result of the 4.0 industrial revolution is a positive development. The transportation of goods and passengers is the primary service provided by the port sector, which encompasses a wide range of services. Port services like pilotage assistance, towing and tug service, emergency repair, berth and berth services, and others are included in this sector and services that are complementary or supportive, such as storage and warehousing, maritime cargo handling, customs, and other services (Nurqamar & Almaida, 2018). With the primary objective of increasing product competitiveness, ports have evolved into extremely significant nodes for intricate logistics chains. According to (Maier-Rigaud & Taylor, 2012), port services are significant because the services provided by the port business have a significant impact on the product's final price. The capital available in Indonesian ports is sufficient to implement industry 4.0. In the digital age, there are two things that help industrial development: a large market and a lot of productive human resources, as well as a demographic bonus. Business competition and development, which formerly relied on the use of natural resources, will shift to mastery of information technology and workforce competence alongside the digital revolution and the industrial revolution 4.0. This is where HR investment is crucial. Normal assets will be depleted and will bring forth ecological issues. In contrast, with unrestricted and dynamic investments in human resources. Indonesia's marine and maritime affairs science and technology are severely lacking and lagging. In Indonesia, marine and maritime scientific studies have not been able to make a significant contribution to

society or offer practical policy advice for its development (Asmara, 2012). The immense maritime and marine potential ought to be utilized for the community's benefit. However, this potential has not been utilized to its full potential. The poverty rate remains high as a result of this. Some of them come from coastal communities that are related to fishermen and are considered to be among the poorest groups. The well-being and means of subsistence of fishermen, particularly small and traditional fishermen, are harmed by illegal and overuse of marine resources. For instance, foreign fishermen's fish theft hurts the state as well as the fishermen themselves. The problems in the marine sector are also exacerbated by damage to mangroves and coral reefs and marine pollution. To manage Indonesia's marine resources, integrated maritime governance and some form of sustainable development are required in light of these issues. So that the maritime sector can be used to achieve the goal of promoting the welfare of the nation and state for state sovereignty. According to (Supriharyono, 2000), coastal and marine resource management is essentially the process of controlling people's or communities' actions around coastal areas so that natural resources can be used wisely while adhering to environmental sustainability guidelines. The environmental management of coastal resources is neither arbitrary nor talkative; rather, we must investigate the issues and issues pertaining to the resources that need to be managed in depth. In management, important considerations include whether or not existing natural resources are important, the potential and components of the resources that need to be managed, the possibility of environmental destruction, and whether or not these resources are profitable for the community.

METHODOLOGY

This study employs descriptive qualitative research. A research procedure that produces descriptive data in the form of written or spoken words from people and observable behavior," according to (Moleong, 2018), describes qualitative research. Descriptive qualitative research, according to Sutopo, is "a type of descriptive qualitative research." "Research is more valuable than simply stating the number or frequency numerically because it is capable of capturing a

variety of qualitative data through elaborate and nuanced descriptions" (Sutopo, 2006).

DISCUSSION

Indonesia is the most dynamic region in the world in terms of both economics and politics because it is situated between Asia and Australia, two continents, and two oceans, the Indian and the Pacific. Indonesia's high reliance on the maritime sector and its advantageous strategic location make it logical that the maritime economy (maritime) serve as the foundation for national economic development. In order for Indonesia's marine sector to generate more foreign exchange, the country's vast marine fishery potential must be effectively utilized. However, a decrease in the number of fish populations in the sea as a result of disturbances to marine ecosystems such as pollution, an increase in the acidity of the sea water, and over-exploitation, as well as an increase in the price of fuel oil (BBM), has resulted in a decrease in the catch of fish and a recent decline in the income of Indonesian fishermen. Indonesian waters are also crowded with mining vessels in addition to fishing boats. Mining products are brought to the ports by these ships from the mining location's port. Different ports in Indonesia and, surprisingly, abroad. There have been numerous attempts to control these transport ships, but the Republic of Indonesia's Ministry of Energy and Mineral Resources has regulated this. Together with domestic shipping vessels and good container ships that transport goods between islands and countries. Indonesia must have an "outward-looking" vision in order to develop a maritime nation based on international regulations that enable it to acquire global marine natural resources and build the national navy's strength in order to control international shipping by creating competition so that Indonesian-flagged ships control international shipping and have superior sea power. In all of Indonesia, the government has not been successful in developing ports that are competitive, effective, and advanced. Consequently, economic activities throughout the archipelago and the ALKI route have not been used to their full potential to boost prosperity. In contrast, Indonesia's marine area has a lot of natural resources and plays a big role in sea traffic. Some of them can be used as tourist attractions with marine resources like fish, coral reefs, and other marine life, or as the

remains of centuries-old ships' treasures. However, Indonesia has not been able to recognize the significance of the sea's potential like it did in the glorious past for decades. More tragically, Indonesia has allowed foreign nations to control and exploit many of its marine resources, which have not been utilized to their full potential. In the past, the nation of Indonesia prevailed in maritime matters. Indonesia is one of the countries that has a lot of sea area. However, the way it protects that area is terrible, and there are too many authorized agencies that all have the same job in Indonesian waters. The state must take precautions to protect its waters in one way, namely by organizing in a methodical and firm manner. Indonesia relies heavily on maritime transport. With a width of 1,870 kilometers, a length of 5,200 kilometers, and a total area of 1,905 million km², Indonesia is regarded as the world's largest archipelago. This nation is made up of five large islands: Sumatra, Papua, Java, Sulawesi, and Kalimantan. Additionally, Indonesia's 80,791-kilometer coastline ranks among the world's longest. Indonesia's sea transportation also plays a crucial role in connecting people and traders, both domestically and internationally, as an archipelago of 17,000 islands. The maritime network in Indonesia is significantly more advanced than the air network, and nearly 90% of international trade takes place by sea (Bloem et al., 2015). Indonesia's GDP is currently supported by revenues from the maritime sector at 20%. There are approximately 1,700 ports in Indonesia's port system, which is arranged in a hierarchical structure. There are commercial, special, non-commercial, and fishing ports among these ports. Approximately 111 commercial ports exist. There are currently 25 important ports that connect domestic and international maritime transportation. (Bloem et al., 2015), the most extensive ports are: Makassar, Belawan, Tanjung Priok, and Tanjung Perak. Geographically divided commercial ports are assigned to the state-owned PT Pelabuhan Indonesia I, II, III, and IV for management. There are a number of ports in Indonesia, including Belawan Port, which is the most important port on the island of North Sumatra and is in the city of Medan, North Sumatra, Indonesia. Under PT Pelabuhan Indonesia I, Belawan Port is a first-class port. In keeping with the vision and mission of the central

government, which currently focuses on the marine and maritime sector, Belawan Port is one of the ports that contributes to the country's earnings in foreign exchange. The export and import flow of Belawan Port in 2013 was 6,203.7 tons, in 2014 it was 6,701.5 tons, in 2015 it was 6,269.0 tons, in 2016 it was 6225.4 tons, and in 2017 it was 6,597.0 tons are all recorded as international trade. This demonstrates that the volume of import-export activities (goods and services) at Belawan Port is high (Nurzanah, 2019). The Indonesian nation's maritime governance system is still sector-oriented, unintegrated, and fragmented, resulting in frequent implementation overlaps. All of this is because there isn't a big plan for how the Indonesian maritime and marine sector will grow that takes into account the roles of all stakeholders in a detailed and integrated way. Harmonization of the national maritime legal system and the development of governance systems in the maritime sector at the regional and central levels must also be carried out in an efficient and integrated manner. The national maritime governance system must be integrated, comprehensive, effective, and efficient. Development of shipbuilding, marine tourism, and port logistics services. Indonesia's maritime economy must develop logistics services for commercial ships, pioneer ships, and cruise ships, marine tourism, modern and traditional shipyards that reflect maritime traditions, navigation experts, and seafarers, in addition to the wealth of living and non-living natural resources and team. In terms of technology, human resource capacity, and access to funding, the service sector's development requires its own efforts. Preparing human resources through secondary and higher education is the first step in developing national capability in maritime education, followed by mastery and application of marine science and technology. This capability can be realized by increasing research and development capacity and providing scholarships for maritime technical schools. A strategy is also required to improve the balance of the quality of human resources in the marine sector between Indonesian regions, particularly in the periphery and Eastern Indonesia, in the context of preparing human resources in the marine sector and increasing the ability to use science and technology. According to the government's announcement, human resources (HR) are

thought to be the primary factor supporting the implementation of industrial revolution 4.0. Especially when you consider that the digital age of today necessitates the skills of human resources. The shipping, logistics, and port industries are among Indonesia's industrial sectors that have adopted Industry 4.0. Graduates from maritime universities who are prepared to deal with the challenges of the new era, when all businesses they face involve technological sophistication and data literacy, must be accepted with greater prudence because of the digital disruption era. Graduates must also be more creative and adaptable to developments in digital-based technology. Maritime Colleges must conduct a variety of education management analyses in order to determine strategies that correspond to the anticipated achievement of graduate competencies in order to produce quality graduates as expected. Through the development of learning facilities and infrastructure that are based on information technology, the acquisition of high-quality human resources, and the rewriting of the curriculum using a human-digital approach, globally oriented education management will be able to meet a variety of job market requirements. Globalization has entered the modern era and can have an impact on society and has the potential to significantly alter the community around them. Society as a framework will unavoidably encounter changes, either eventually. There is a time difference between the state before change and the state after change. Change can also be a setback or a step forward. It is essential for every human being to have the desire to make their lives even better. In order for humans to advance and survive, they need to be able to adapt to their surroundings, which prompts them to consider and try to do something that eventually can change the environment. As a result, changes are brought about by external factors. Because basically every human being has an unlimited number of interests, these changes affect aspects of people's lives. The existence of Belawan Port will have a significant impact on aspects of the community's socioeconomic life as a result of the increasing visibility of its activities. The advancement of these local area exercises can't be isolated from the effect of port exercises. The growing number of community activities like shops, offices, banking, and other activities

has an effect on the economy of the area. The existence of Belawan Port has a significant impact on the socioeconomic environment of the community that surrounds it, one of which is the creation of business opportunities that have the potential to boost the economy of the community and, as a result, the income of the community that surrounds it, thereby affecting the community's well-being. The expanding developments that have taken place in and around the Belawan Port region have been influenced by the fact that Belawan Port is located where this study is being conducted. Numerous individuals are currently opening new businesses, particularly in the populist economic sector, including restaurants, food and beverage stalls, fuel oil (BBM) vendors, mobile food and beverage sellers, and so on. This is creating a variety of business opportunities. This was all made because of the effect of Belawan Port activities. The existence of port activities operating in an area and the port's contribution to progress for the residents of the area are two of the criteria used to evaluate a community's welfare in relation to the presence of a port. This idea is based on the idea that port companies that have been established in a region have a greater impact on better socioeconomic changes in the port area. A technological generation known as the "industrial revolution 4.0" began with significant shifts in human labor practices, particularly in the industrialized world. Machine technology is present in almost every human workspace in this day and age. In general, this change makes every human task simpler. However, in the face of intense global industrial competition, the advancement of the industrial revolution 4.0 necessitates that existing human resources continue to develop their skills and expertise. The evaluation of the creative economy cannot be separated from the growth of the creative economy and creative industry. Because the creative industry is based on human creativity, the quality of human resources is important for supporting the creative industry's development in the era of industrial revolution 4.0 and the national creative industry's competitiveness. The main obstacles to the growth of the creative industry in Indonesia continue to be a lack of high-quality training facilities and a lack of qualified human resources. In order to overcome issues with human resources in the creative industry, a number of strategies have been developed,

including:

1. Creation of innovative educational and training facilities. The Indonesian workforce as a whole is not adequately served by the relatively small number of creative industry education and training institutions. The majority of established educational establishments can only be found at the district or city level. Subsequently, the public authority should energize and work with the confidential area to create instructive and preparing foundations for innovative businesses, improve on the authorizing system, and hold grant programs for organizations that have effectively delivered talented and proficient modern HR.
2. New academic programs that are tailored to meet the requirements of the creative industry and reflect its growth. It is hoped that the existence of a specialized creative industry study program will develop human resources who are prepared to work hard and compete in Indonesian and global creative industries.
3. Lay out participation between instructive establishments and inventive industry HR preparing with innovative industry organizations. Implementing a mandatory internship program tailored to HR expertise is one way to implement this strategy.
4. Presenting creative industry entrepreneurs who have achieved success in their fields at seminars and motivational events. Human resources who receive education and training will benefit from such an event by becoming more creative and motivated.
5. Make it possible for selected HR to take part in training overseas. It is hoped that in the future it will be possible to produce human resources with global creative industry expertise standards and the ability to compete on an international scale.

Human resources have undergone numerous transformations, as can be seen. Human resource management, on the other hand, must be able to manage relationships between people and their resources so that they are used to their full potential in order to maintain the country's high standard of human

resources and continue to inspire the next generation to be creative and innovative (Rusli & MASHUR, 2020). According to (Fitriana, 2019), one of the primary factors that determine a nation's success in utilizing the opportunities presented by the Industrial Revolution 4.0 is its human resources (HR) department. As a result, Indonesia's human resources must be prepared with the right policies and strategies in order to meet the demands of Industry 4.0 and remain competitive (Rohida, 2018). 4.0 of the Industrial Revolution has significant opportunities and difficulties, particularly for the business community. The Industrial Revolution 4.0 was the result of enormous challenges, particularly the wave of scanning and automation to reduce the number of open jobs (Heri, 2019).

CONCLUSION

The capital available in Indonesian ports is sufficient to implement industry 4.0. Preparing human resources through secondary and higher education is the first step in developing national capability in maritime education, followed by mastery and application of marine science and technology. This capability can be realized by increasing research and development capacity and providing scholarships for maritime technical schools. The existence of Belawan Port will have a significant impact on aspects of the community's socioeconomic life as a result of the increasing visibility of its activities. The advancement of these local area exercises can't be isolated from the effect of port exercises..

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