THE FACTORS THAT INFLUENCE ARTIFICIAL INTELLIGENCE IMPLEMENTATION AT PT PELINDO III (Case Study in Terminal Teluk Lamong Surabaya)

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ABSTRACT

This study uses qualitative descriptive methods. The type of data used in this analysis is secondary data from library analysis surveys, research-related data from various sources, websites, and government documents that can facilitate the completion of this research report. In the era of globalization, all private companies and state-owned enterprises (BMUN) already have various advanced machine technology features as one of the tools that will facilitate human performance to improve the economy. As found in PT Terminal, Teluk Lamong (PT TTL) already has various tools for unloading advanced goods or known as artificial intelligence (AI). This tool can help performance and has a unique concept, namely, Go green (No pollution).

Keyword: *factors, Artificial Intelligent, Implementation.*

A. PRELIMINARY

In Indonesia, the emergence of Internet-based network technology as a digital media has changed various aspects of people's lives, one of which is the economic aspect. Technological advancement is inevitable in life as technological advances will go according to the knowledge of scientific advances. Each discovery is developed for positive benefits to human life. Technology also offers other conveniences, as well as new ways to benefit human activity (D. Rahayu 2019). One factor that can be considered important in supporting internet capabilities is artificial intelligence applications that are usually found in NPCs when making smart decisions when situations have multiple options with different results, making appropriate, efficient, and useful behavioral choices (UTAMA, Primartha, dan Primanita 2016).

Indonesia is entering a new period, the digital age. Indonesian jobs cannot meet the needs of a technology-based workforce. To do this, the government seeks to accelerate economic growth and technological advancement (DJUNAEDI 2018). Advances in empowerment technology have enabled artificial intelligence to manifest itself. The most prominent opponents of artificial intelligence and automation systems often lead to donations provided by these technologies, as can

be seen in various aspects of human life, including from a trade and business perspective, Health, safety and security, transportation to social systems, and more. Similarly, the design of artificial intelligence, automation, and Robotics systems poses a serious threat to jobs, safety, health, and more in the future (Ikram dan Kepli 2018). The development of technology should no doubt be from all parts of the world that can already feel the era of globalization, where many tools facilitate human performance, such as those in the bay terminal lamong Surabaya city. Surabaya is a smart city with various technology features used to stimulate economic growth activities. But with the sophistication of technology, if adequate human resources do not support it, then all advanced tools cannot be adequately implemented.

B. LITERATUR REVIEW

Research conducted by Azwary, F., Indriani, F., & Nugrahadi, D. T. in 2016. He conducted a study titled "Question Answering System Based on Artificial Intelligence Markup Language As Information Media". The results showed that nowadays, computers could think and make their own decisions (Azwary, Indriani, and Nugrahadi 2016).

Furthermore, research conducted by Gloria in 2018 entitled "Utilization of Artificial Intelligence In The Role of Public Relations As Boundary Spanning In E-Commerce Type B2c". In the study described the use of technology in Indonesia well wherein doing buying and selling does not need to be face-to-face and does not use cash (Gloria 2018).

Pasuhuk conducted the next study in 2018 with the title "Faith And Development of Science and Technology Linked To HIV/AIDS". The study explained that in Indonesia, the application of AI is still less like such as the prevalence of television, radio, computers, and the internet, it is easier for people to access knowledge. Current events occur around the world, making it easier for people to communicate with others. From some previous researches, no one has researched AI implementation in Pt. Pelindo III. The author tries to research on how AI is implemented in PT. Pelindo III (Lamong Bay Terminal Surabaya).**Artificial Intelligence**

Now buying and selling in conducting transactions over the internet can be done through mobile phones, gadgets, or computers connected to the internet so that these meeting transactions are no longer necessary. In Indonesia, companies and industries are considerable, and the rise of young scholars from universities in Indonesia from year to year. Therefore, companies and industries in Indonesia need a significant workforce to develop the company's quality. Be it labor in IT or in the department of acupuncture and technicians or public servants to run the company (F. M. Putra, Kodong, dan Florestiyanto 2020). Many companies in Indonesia are improving quality and service. The use of artificial intelligence or AI technology is becoming increasingly common. Like smartphones, machines, directionless trains, drones to use robots have changed the landscape of human life (Nawi 2019). Computer processing based on artificial intelligence technology to solve problems by adopting human forms, behaviors, and habits in experiencing its life in this world, is now more often used as a clan study material working for

computer experts, especially in the field of artificial intelligence technology (Kusumawati 2018).

Development of Science and Technology in Indonesia

SCIENCE AND TECHNOLOGY stand for science and technology, a source of information that can raise one's awareness or insight into technology. It can also be said that the concept of science and technology is all technology-related, the latest technology related to discovery or innovation related to the technology itself. Knowledge and technology are improving very quickly at the moment. It can be seen from the increasing number of advanced technologies of various types that can support human life activities (Adiningrum 2019). The emergence of new technologies and the presence of resources are inseparable. The involvement of modern technology in witnessing all their operations is of great benefit to humans. For example, such as the prevalence of television, radio, computers, and the internet, it is easier for people to access knowledge. Current events occur around the world, making it easier for people to communicate with others (Pasuhuk 2018). But behind the technological sophistication that human resources are the main assets of nation-building. The abundant availability of natural resources and increasingly advanced capital and technology resource capacity will have no impact on added value without human help (Ratnasari 2019). Humans and technology must be side by side in carrying out their respective tasks and functions.

Industrial Revolution 4.0 was the creation of the industry, power, robotics, and internet-focused networks. This work describes the implementation of the robot middleware (ROS) operating system. Use raspberry pi to counter the challenges of industrial revolution 4.0 in the operation of industrial household appliances and computers. ROS has nodes, subjects, and messages that can be used to monitor Raspberry Pi GPIO pins to be highly active (1) or low active (0) (Jalil 2019, 0). Artificial development intelligence revolutionizes the impact of digital marketing on interest purchases from consumers, thereby increasing sales. Artificial Intelligence is using like digital advertising combined with simple technological advances in monitoring and cashless transactions. All are running with a touch through a gadget or smartphone; this p allows consumers to have the best service that is easy and affordable (Pangkey, Furkan, dan Herman 2019). If we look at the development of AI and its use abroad, of course, we will be amazed after seeing it. Adequate facilities and facilities allow for several European and American countries to begin AI research that will be implemented in various sectors ranging from education, economics, and National Defense. A country that studies AI very often is the United States and China. Some processes address the use of AI in a government-corporate environment by involving various stages of companies in Indonesia. Among other things, the use of seeing AI as a digital assistant in viewing learning lessons, as a system in student evaluation, as a system in student chat services, and other examples (Pratikno 2017).

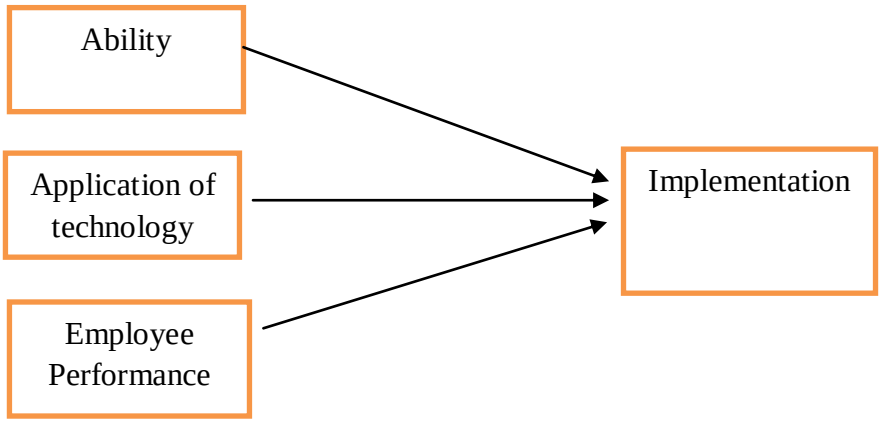
Employee Performance

The success of employees in an organization must be built from the current community of corporate organizations. The culture compounds success in-depth compensation programs that friendly and organized organizations help the

organization's workers become more passionate about fulfilling their responsibilities and how they function and improve the Company's efficiency. Humans are the most valuable tool in an organization to achieve success through some resources that exist within the organization. Without people, however, the superior technology can't even accomplish the organization's goals (Yuniarti dan Suprianto 2020). Because human resources (HR) is a critical and dominant factor in the development cycle, and without the operationalization of HR, output tools do not work alone. The Company has realized the vital role of HR in the Company's operation, requiring design so that employees can work well to achieve the expected results. human resources need to get unique organizational management support and focus (R. E. Putra dan Prasetya 2018).

The rapid advancement of science and technology greatly influences the success of a business today. It is crucial to advance the business venture for proper management. The firm takes a different form of maintaining and growing its operations. Intense competition led to businesses being forced to preserve their company's existence to improve profitability. One hope is the production of more professional and quality human resources. Work motivation is significant in improving work productivity because people with high motivation to work will try with all their might to make work as productive as possible (Siswanto 2019). So every company established at its core expects in the future that it will experience rapid growth in terms of market and industry, as well as high production success in the field of employment (Wartana, Adi, dan Asih 2019). The success of the workers for the survival of the company. In addition to leadership style as a tool to optimize employee efficiency, organizations need to pay attention to organizational communication as good performance is highly determined by good communication between employees and between employees and leaders in the workplace (Audina dkk. 2019).

Theoritical Framewrok



C. METHODS

The study uses qualitative descriptive by looking at and analyzing various phenomena that are being studied to get the purpose of the creation of this journal. Qualitative research methods are a set of study procedures that provide

comprehensive information about human characteristics, circumstances, environment, in both written and spoken words found in other populations (Moleong 1994). Researchers continue to use this approach because it is instrumental in dealing with current problems and anomalies and meet research needs to find data. The type of data used in this analysis is secondary data from library analysis surveys, research-related data from various sources, websites, and government documents that can facilitate the completion of this research report.

C. EXPLANATION

Research Sites

Teluk Lamong Surabaya Terminal (TTL) which is a subsidiary of PT Pelabuhan Indonesia III (Persero) is the most advanced port in Indonesia that carries the concept of Go Green Port (No pollution) equipped with super advanced facilities, Teluk Lamong Terminal is built with 14 LWS deep kade and equipped with advanced equipment that supports modernization and automation of port services. The terminal, which was inaugurated in 2015 by President Joko Widodo, carries the concept of Go Green by using gas fuel and minimizing emissions from its entire business process. This is a form of Pelindo III Group's contribution to environmental sustainability.

PT Terminal Teluk Lamong (PT TTL) already has super-advanced loading and unloading equipment or commonly known as artificial intelligence (AI), where the alignment of loading and unloading equipment in Teluk Lamong Terminal has been very sophisticated. Lamong Bay Terminal also initiated the modernization of port operations to reduce emission levels. Simultaneously, it can improve the efficiency of operational costs through automation of port facilities, to bring benefits to both businesses and the environment.

Impelementation of AI Terminal Teluk Lamong Surabaya

a. Application of AI to Ship to shore Crane (STS)

Shore to shore Crane or commonly referred to as STS, is a form of artificial intelligence implementation applied by Lamong Bay Terminal in container loading and unloading equipment at the Port, such as ship to shore (STS) cranes of the state-of-the-art Lamong Bay Terminal operated by electric power and has a lifting force of 40 tons and has a range of up to 14 row or equivalent to 35 meters towards the sea.

Besides, Shore to ship crane (STS) is also a semi-automatic tool where the operation can be done remotely, i.e., by using a remote control or joystick, a ship to shore crane operator (STS) can do its job through. A superior room called a control room as we know that the container loading and unloading equipment other than Shore to shore crane can only be operating through the operator cabin sealing on each tool.

Then in terms of operation, ship to shore crane (STS) is not only operated by male operators, but ship to Shore (STS) can also be performed by female operators, as shown in the photo below:

Figure 1: Photos of female operators handling container receiving

If reviewed in terms of the application of Occupational Safety and Health (K3), then by using a ship to shore crane (STS) in the loading and unloading activities of goods (containers) in the Port is a very positive value because by using this tool. Lamong Bay Terminal can reduce the risk of work accidents that can occur on the instrument's operator. For example, on a manual container crane loading and unloading tool (cc). When going to work, a crane operator must climb an elevator or stairs that are approximately 40 (forty) meters high from the surface of the elevator condition is not fair, or the stairs are slippery. It can cause the operator to fall. This incident has never occurred in all companies of PT Pelabuhan Indonesia III group.

b. Application of AI in receiving /delivery container tools in the Field (Automatic Stacking Crane / ASC)

As with ship to shore crane (STS), the way Automatic Stacking Crane (ASC) works is almost the same, i.e., tools used to handle or handle containers in the port. The difference is if ship to shore (STS) cranes are used to manage container loading and unloading activities at the dock i.e., unloading containers from ship to dock or loading containers from port to ship. Still, an automatic stacking crane (ASC) is a tool used to help carry out container acceptance activities (receiving) or shipping containers in the stacking field.

Suppose we visit Teluk Lamong Terminal (TTL) Surabaya. In that case, we will see how the tools used to serve containers there as if running by themselves because, indeed, no operator operates the agency directly. The device can move like a robot just through remote control commands remotely.

As revealed by one of the operators of Automatic Stacking Crane (ASC) Terminal Teluk Lamong, Surabaya said, "When there is a container that will be handling, then the truck driver just park his truck at the end of the specified Container Yard (CY)." Then the driver will press the button; there a sign that he is ready to be served. We will receive the service automatically on the computer that is not working. We set through this remote control row position and tier how much we will do stacking, after which the tool will move by itself doing stacking (container placement) according to the situation we have set from here," he said at a glance.

To clarify this, some images of manual and automatic container stacking tools in Surabaya's lamong bay terminal:

figure 2: Rubber Tyred Gantry / RTG

The image is an example of a tool (Rubber Tyred Gantry / RTG) functioned as handling heavy equipment in the form of a container manually. In the device, there is still space/operator cabin as a place where the operator performs loading and unloading activities or handling containers in the stacking field.

Figure 3: Automatic Stacking Crane (ASC)

The picture above describes a tool used handling containers in the buildup field at Teluk Lamong Terminal (TTL) Surabaya called Automatic Stacking Crane (ASC). The agency is no longer equipped with the operator cabin on the device because the operator cabin has been replacing with room control.

D. CONCLUSION

The development of technology in Indonesia has expanded to all cities not separated in Surabaya, which got the nickname a smart city. The handle smart city is inseparable from the advanced technologies that Surabaya city has in supporting economic growth. As there is Teluk Lamong Surabaya Terminal (TTL), which is

a subsidiary of PT Pelabuhan Indonesia III (Persero), is the most advanced port in Indonesia that carries the concept of Go Green Port (No pollution) equipped with super-advanced facilities. So no wonder Surabaya is now the city that has the fastest economic growth.

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