



**TECHNIUM**  
SOCIAL SCIENCES JOURNAL

# Technium.

52/2023

2023

A new decade for social changes

**Technium**

**Social Sciences**

Powered by

**PLUS**  
**COMMUNICATION**



International  
Communication & PR



## Operational Risk Management On The Training Ship Bung Tomo

Teguh Pribadi<sup>1</sup>, Agus Dwi Santoso<sup>1</sup>, B.B Harianto<sup>2</sup>

<sup>1</sup>Politeknik Pelayaran Surabaya, Surabaya, Indonesia

<sup>2</sup>Politeknik Penerbangan Surabaya, Surabaya, Indonesia

[jeftaseptiano@gmail.com](mailto:jeftaseptiano@gmail.com), [agusbp2ipsby@gmail.com](mailto:agusbp2ipsby@gmail.com), [bambangfarzardy@gmail.com](mailto:bambangfarzardy@gmail.com)

**Abstract.** Risk management plays a crucial role in ensuring the sustainability of an organization's operations. At the Surabaya Navigation Polytechnic, Bung Tomo's training vessel became the backbone for cadets to undergo navigation training. However, it is important to acknowledge that the ship's operational activities are not exempt from potential risks. Therefore, the study aims to identify potential obstacles or issues that may arise in the implementation of risk management at the Tomo Training Ship. This research adopts a qualitative descriptive approach, prioritizing an in-depth understanding of the observed phenomena. Various data collection techniques, such as observations, interviews, and documentation, are used to gain comprehensive insights. The results of this study reveal that the Engine of Tomo's Training Ship faces the highest level of risk. It's related to the fact that the ship hasn't undergone a major dock process since it was officially inaugurated six years ago, causing frequent damage. Therefore, risk management focused on the engine aspects becomes an urgent need to minimize potential interference in ship operations. Precautionary measures, periodic maintenance, and possible risk reduction must be implemented carefully to ensure the safety and reliability of the Tomo Brother's Training Ship during the cadets' sailing training.

**Keywords.** Implementation, Management Risk, Training Ship, Operational

### 1. Introduction

The shipbuilding industry is a key pillar in the global economy, facilitating a significant portion of international trade. However, with the operational complexity and environmental factors involved, risks associated with maritime activities become a crucial aspect that cannot be ignored. The implementation of risk management becomes a paramount key in ensuring the safety and smooth operation of ships at sea[1]–[3]

One of the training ships that played a significant role in shaping the human resources in the maritime sector is the Tomo Brother's Training Ship. This ship is not only an education for prospective sailors, but also represents a great responsibility in ensuring safety and security during the training process in the ocean[4]–[7]. In this article, we will explore in depth the implementation of risk management on the operational Tomo Training Ship. We will discuss strategies and methods applied to identify, evaluate, and manage potential risks that may occur during ship operational activities. By understanding how risk management is effectively

implemented, it is expected to provide valuable insights in improving safety and security systems in the shipping industry[8], [9]

Risk management in the context of the shipping industry is a systematic approach to identifying, assessing, and managing risks associated with ship operations. This encompasses various aspects, including crew safety, navigation safety, environmental damage, and other factors that can affect maritime activities[9]–[12]. The implementation of risk management enables stakeholders in the shipping industry to clearly understand the existing risks and take the necessary preventive or mitigation measures. It involves developing effective strategies, procedures, and policies to reduce the likelihood of occurrence of unwanted incidents or events.

The Bung Tomo's Training Ship, with its role as an educational and maritime simulation platform, involves a unique set of risks. Identifying these risks is a key step in implementing effective risk management[13].

One method used in risk identification is historical analysis[14]. In this case, data from previous events or incidents at sea are evaluated to determine patterns and trends that may indicate potential risks in the future. Furthermore, field observations and consultations with marine experts can provide additional insight into potential risk.

Once the risks are identified, the next step is to carry out an evaluation to determine the severity and probability of each risk. This allows the ship's manager and training staff to prioritize the action to be taken. It is important to consider aspects such as financial consequences, impact on human safety, and environmental damage. By understanding these risks holistically, the right decisions can be made to reduce or manage those risks.

Effective risk management strategies require collaboration and commitment from the entire ship's operational team. This includes regular training on safety procedures, the use of protective equipment, and increased awareness of specific risks. The use of technology also plays a crucial role in risk management[15]. Advanced surveillance systems and security devices can provide critical real-time information to make the right decisions in an emergency.

By implementing effective risk management, the operation of the Tomo Brother Training Ship can be run with a high level of security and efficiency. Understanding potential risks and taking proactive action to manage them is a crucial step in ensuring the safety of ship crew and the sustainability of the shipping industry[16], [17].

Through a combination of strategy, technology, and commitment from the entire team, the shipping industry can continue to grow in a sustainable and secure direction. Thus, risk management is not only a proactive approach, but also a long-term investment in the future of the global maritime industry.

## **2. Method**

Theoretically and practically, research is a way to develop science. The author used a qualitative research approach in this study [18]–[20]. Qualitative research, also known as natural research or natural research, is a type of research that emphasizes processes and meanings that have not been tested or cannot be properly measured with descriptive data [21]. This research analyzes events that are heard, felt, or written in narrative or descriptive statements. It is a type of research that is naturalistic or in a real-life setting, focusing on its quality. Qualitative research employs a descriptive approach. The descriptive method is a type of research that uses words, images, and non-numerical data[22], [23]. Furthermore, all collected information may contribute to what has already been researched. The researcher describes the data obtained directly from the training ship Bung Tomo as specified by the researcher. The data is described in accordance with the actual conditions in the field and

compared with existing theories, forming the basis of this study. This research presents facts without manipulating what happened. Based on the theme addressed, this research is categorized as field research or a case study. A case study aims to gather data, gain understanding, and study the background, current conditions, and how the research subjects interact directly with them. This type of study is more focused on investigating issues or phenomena relevant to the current or past world. "Operational Risk Management On The Training Ship Bung Tomo" is the case study for this research. The Research Location is where the research process used to solve the research problem takes place. In this study, the author selected the location on the Training Ship Bung Tomo, which was docked at the Navigation Dock in the Tanjung Perak Port area of Surabaya.

### 2.1 Data and Data Sources

Data must be objective, comprehensive, representative, up-to-date, and relevant to the problem to be solved in order to provide an overview of a situation or problem. In addition, the data sources used in this study are divided into two categories, (1) *Primery Data Source* refers to data obtained directly from the research subject that requires further management. This data can be acquired through interviews or discussions with parties related to the research subject. Primary data was obtained from interviews with the Captain and crew members of the Training Ship Bung Tomo. (2) *Secondary Data Source* consists of a wide variety of official documents from various government agencies, financial reports from institutions subject to research, books, articles, as well as previous research related to research.

### 2.2 Data collection technique

Data collected by researchers for use in research is known as data collection techniques. To obtain data in the field that is relevant to the problems to be investigated, researchers use metrode. (1) Questionnaire, the method of data collection used, involves providing a series of questions to respondents or interviewees to answer. In this study, the questionnaire is of a closed type, meaning respondents are only required to choose from the provided answers. The researcher utilizes the Likert Scale as a reference to assess the attitudes, opinions, perceptions of individuals or groups towards social phenomena. Additionally, this scale is further elaborated into indicators of the variables to be measured [24]–[26]. (2) Library study, used to obtain or gather information by reading books and written material related to the subject of research. Furthermore, when a research problem becomes difficult to solve, a library study is used as an additional source of data.

**Table 1.** Scale of measurement

<b>Conditions With Risk</b>	<b>Values</b>
Not Available (3)	3
Not Sufficient (2)	2
Already Sufficient (1)	1

### 2.3 *Analysis Technic*

In this study, data analysis is the process of searching, compiling, and analyzing data obtained from interviews in a systematic way so that the data is easily understood and may be useful to others. This research uses quantitative interactive analysis covering (1) Data Reduction means summarizing and sorting through important aspects, searching for themes and patterns. In this stage, the researcher condenses all the data gathered in the field and focuses on the essential elements to discover themes and patterns through the process of refinement and categorization of the data. Refinement is carried out by converting long words and sentences into shorter ones, and data categorization is done by combining long words and sentences into shorter ones. After the field research, data transformation and the process continue until the final report is produced. (2) Data Display is the presentation of data after it has been reduced. The data is conveyed in the form of brief explanations. The process of organizing the data is done by the researcher, who systematically arranges the data and then narrates the data obtained in the field. The results of the analysis are incorporated into notes and sentence explanations about the conclusions drawn from observations, interviews, and field documents. The research focus is used to structure the data. (3) Conclusion and Verification is the subsequent process that takes the provisional conclusion from the field data. The initial conclusion is only temporary, and if no strong evidence is found to support it, the conclusion will change. The researcher then verifies the research findings and, if the interim result requires additional data, the data collection process starts again[27]. Setelah verifikasi selesai, peneliti membahas temuan lapangan.

### 2.4 *Research stages*

This phase consists of four phases, namely the Preparatory Phase, the Implementation Phased, the Data Analysis Phase and the Reporting Phase. (1) Preparation Phase at this stage, researchers begin to make research plans, select fields of research, manage licensing, evaluate fields, and prepare research reference materials. This includes searching for information on research topics from libraries and the internet. In addition, including the process of making proposals to be submitted to the Research Unit. (2) The Implementation Stage is the execution step, in this phase the researcher visits the research location to gather as much data or information as possible through interviews and documentation. (3) The Data Analysis Stage is the step after the data is collected, where data analysis takes place. Here, the researcher will compare the collected data with existing theories and then record the results. In this stage, the writer strives to create a systematic report that is easily understood by others. (4) Reporting Level is the last stage or phase of the reporting phase, at which the conclusion of the data analysis will be used as a basis for the preparation of the research report. The last stage involves the management of the completeness of the requirements for accountability of the budget and research results.

## 3. **Result and discussion**

### 3.1 *Research Location Description*

The Training Ship (TS) Bung Tomo is owned by the UPT BPSDM of the Ministry of Transportation and operated by Poltekel Surabaya. Built in 2016 at the Steadfast Marine shipyard in Pontianak, the ship is equipped with two Mitsubishi main engines with 749 horsepower each and is used for voyages in the eastern waters of Java Island. It was first launched on October 7, 2017. TS Bung Tomo is a specialized training ship capable of accommodating 20 crew members, 10 instructor educators, 100 cadets, and 100 general passengers.



**Figure 1.** Bung Tomo Training Ship

The ship "TS. BUNG TOMO" with registration code "YCCB2" is owned and operated by the Ministry of Transportation - Human Resources Development Agency (BPSDMP) of Surabaya Maritime Polytechnic. The ship was built by PT. STEADFAST Development in Pontianak, a company specializing in shipbuilding, engineering, and maritime architecture. The ship has several specifications and key features that make it an important asset for various maritime activities.

One of the most important aspects of a ship is its main dimensions. "TS. BUNG TOMO" has an overall length (LOA) of 63.00 meters, a molded breadth of 12.00 meters, a molded depth of 4.00 meters, and a molded draft of 2.80 meters. These measurements are crucial for navigation and operational purposes, ensuring the ship can safely navigate through various waters. The ship is capable of accommodating 4 VVIP passengers, 10 instructors, 80 male cadets, 20 female cadets, and 100 passengers, making it versatile for both educational and passenger transport purposes.

In terms of power, the ship is equipped with two MITSUBISHI diesel engines (Model S6R2-T2MPTK3L) with a total power of 2x1000 HP. These engines operate at RPM 1500 and are known for their reliability and performance. The ship also has a dirty tonnage of 1,200 GT and can reach a maximum speed of 12 knots, making it capable of a variety of maritime operations.

The ship's tanks have significant capacity, allowing the vessel to operate for extended periods without the need for refueling. The ship has a capacity of 186,824 m<sup>3</sup> for fuel oil, a capacity of 0.125 m<sup>3</sup> for Fuel Oil Drain (FOD), a capacity of 222,856 m<sup>3</sup> for fresh water, a capacity of 83,464 m<sup>3</sup> for ballast water, and each a capacity of 5,243 m<sup>3</sup> for bilge water, sludge, and dirty water. Additionally, the ship has a lubricating oil tank with a capacity of 4,000 m<sup>3</sup> located at the rear of the ship.

In terms of navigation, the ship is equipped with a comprehensive set of equipment. It includes standard navigation systems such as radar, GPS, GPS plotter maps, MF/HF radio, 2 VHF radios, Inmarsat C, Navtex receivers, 4 SARTs, AIS, magnetic compass, gyro kompass, autopilot, echo sounder, Doppler speed log, weather fax, barometer, thermometer, hygrometer, and anemometer. These tools are essential for safe and accurate navigation, communication, and weather monitoring.

The ship's main engines, two Mitsubishi diesel engines, are known for their power and efficiency. Each engine has a power of 759 bkW and operates at 1500 RPM. These engines are

turbocharged, aftercooled, and function as 4-stroke engines. The ship is also equipped with two marine reduction gears by NICO (Model MGN90BL) with a gear ratio of 3.061:1, providing the necessary mechanical power transfer for propulsion. For auxiliary power generation, the ship is equipped with three main MITSUBISHI generators (Model AD136T), each with a power of 355 BKW and operating at 1500 RPM. These generators are fuel-efficient, consuming 67.5 L/hour each. They are 6-cylinder, 4-stroke, single-acting engines, ensuring reliable power generation. Additionally, the ship is equipped with a DOOSAN harbor generator with a power of 130KVA, which is crucial for providing power when the ship is berthed in port. An emergency generator is also available, powered by a MITSUBISHI (Model S6KMECCALTE) with a power of 60KVA, providing backup power in critical situations.

In the case of pump equipment, the ship has a freshwater generator with a capacity of 5 tons per day, ensuring a reliable freshwater supply for a variety of requirements on board. A dirty water treatment plant is also installed, capable of processing 1.2m<sup>3</sup> of dirt water per day, serving up to 20 people. In addition, an effective oil-water separator is available, effectively removing oil from water to meet environmental standards and regulations with a disposal rate of less than 15 ppm. Overall, the ship "TS. BUNG TOMO" is a well-equipped and versatile vessel owned by the Ministry of Transportation and operated by Surabaya Maritime Polytechnic. With impressive specifications and comprehensive equipment, this ship is ready to serve various purposes, including maritime education, passenger transportation, and other maritime operations.

### 3.2 Risk Identification

In this stage, the researcher identifies the risks faced by the Training Ship Bung Tomo. When identifying risks, one must consider Threats, which are risks that will have a negative impact on achieving targets if they occur. Additionally, Risk Triggers are signs or warning signals that identify whether the potential risk will occur. In risk identification, the researcher applies management elements using the 6 M method (Man, Money, Machine, Method, Material, Market, Minute) to identify the main issues.

**Table 2.** Method 6M

Human Resources	The crew of the Training Ship Bung Tomo consists of 16 (sixteen) individuals, including the Captain.
Money	Operational budget of Tomo's training vessel in APBN DIPA and BLU DIPA
Machine	Main machine, auxiliary machine, generator
Material	BBM, Oil, Water Offer, Food
Method	SOP, Manual Guide, Official Government Regulations
Minute	Shipping time, time efficiency.

**Table 3.** Question Material

No.	Unsur	Kategori	Materi Pertanyaan
1.	Man / SDM	The performance of the crew members.	a. Is the SOP complete and can it serve as a definite guide for the crew members? b. Do the crew members need additional training? c. Do the crew members feel comfortable working on the ship?
2.	Money	Sufficient budget for ship operations	a. Is the budget for crew meals / provisions adequate? b. Have the allowances / wages for the crew been paid on time? c. Is the budget for ship facilities sufficient?
3.	Machine	Used optimally	a. Does the ship's engine frequently experience damage? b. Is it easy to obtain spare parts? c. Is the ship docking done regularly?
4.	Material	Adequacy of ship needs	a. Is the availability of fuel, oil, fresh water, provisions, and work clothing sufficient? b. Are the safety equipment quantities sufficient? c. Is the replacement of ship equipment (spare parts) done regularly?
5.	Method	Operational guidelines on board	a. Does every activity on the training ship have Standard Operating Procedures (SOP) and Work Guidelines? b. Are the ship's documents still valid? c. Is the current working method still relevant?
6.	Minute	Time efficiency	a. Is the berthing time of the ship sufficient? b. Is the operational time of the ship sufficient? c. Is the waiting time for the ship sufficient?

### 3.3 Risk Measurement

The researcher conducted a survey to measure risk by providing a questionnaire to 16 (sixteen) respondents or crew members. The purpose of this survey is to understand the respondents' feedback on the possible ways they might consider handling risks. The questionnaire addresses the potential risks that may arise from factors such as human resources, ship machinery, budget, and working methods. The values assigned by the respondents are as follows:

- Rated low (value 1) if there are no documents or activities have not been carried out yet;
- Rated moderate (value 2) if documents have been neatly prepared but are not relevant or if activities are insufficient;
- Rated high (value 3) if both documents and activities are sufficient.

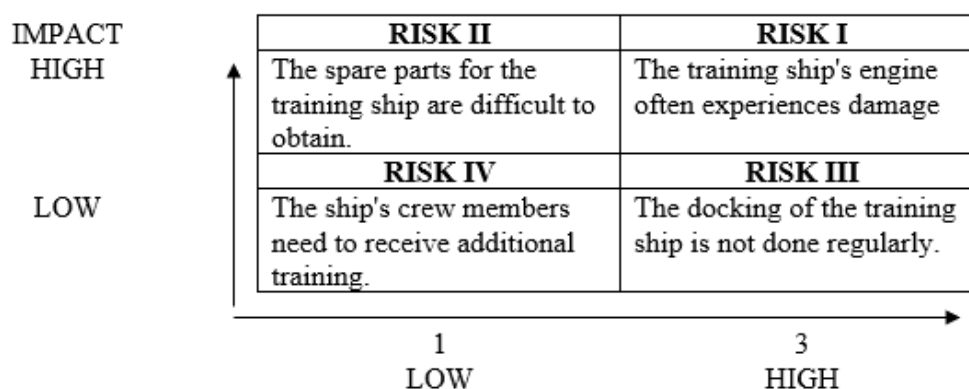
**Table 3.** Question Material

No.	Element	Substance	Condition with Risk Value			Number of Respondents (Crew Members)
			Not Yet (3)	Not Adequate (2)	Adequate (1)	
1.	SDM	a. Is the SOP complete and can it serve as a definite guide for the crew members?	-	16	8	16
		b. Do the crew members need additional training?	-	26	3	16
		c. Do the crew members feel comfortable working on the ship?	-	18	5	16
2.	Money	a. Is the budget for crew meals / provisions adequate?	-	14	9	16
		b. Have the allowances / wages for the crew been paid on time?	-	14	9	16
		c. Is the budget for ship facilities sufficient?	-	30	1	16
3.	Machine	a. Does the ship's engine frequently experience damage?	-	32	-	16
		b. Is it easy to obtain spare parts?	-	30	1	16
		c. Is the ship docking done regularly?	-	30	1	16
4.	Material	a. Is the availability of fuel, oil, fresh water, provisions, and work clothing sufficient?	-	2	15	16
		b. Are the safety equipment quantities sufficient?	-	2	15	16

No.	Element	Substance	Condition with Risk Value			Number of Respondents (Crew Members)
			Not Yet (3)	Not Adequate (2)	Adequate (1)	
5.	Method	c. Is the replacement of ship equipment (spare parts) done regularly?	-	20	6	16
		a. Does every activity on the training ship have Standard Operating Procedures (SOP) and Work Guidelines?	-	-	-	16
		b. Are the ship's documents still valid?	-	24	4	16
		c. Is the current working method still relevant?	-	10	11	16
		a. Is the berthing time of the ship sufficient?	-	2	15	16
6.	Time	b. Is the operational time of the ship sufficient?	-	2	15	16
		c. Is the waiting time for the ship sufficient?	-	20	6	16

### 3.4 Risk Impact Analysis

Risk analysis is an attempt to evaluate the impact of risk or potential risk. Figure 2 shows a risk analysis divided into 4 risks, each adjusted to the risk value.



**Figure 2.** Bung Tomo Training Ship Risk Map

From the risk measurement results, it can be observed that :

- Risiko I** : Among the ship machinery factors, it has the highest risk value at 32. According to the crew members (ABK) who provided responses, the ship frequently experiences malfunctions.
- Risiko II** : Among the ship machinery factors, it received a risk value of 30. According to the crew members (ABK), obtaining spare parts is difficult.
- Risiko III** : Among the ship machinery factors, it received a risk value of 30 according to respondents who stated that the ship has never undergone docking.
- Risiko IV** : Of the SDM elements that received a risk rating of 26 which, according to most respondents from ABK, wanted additional training on both safety and other technical issues.

#### 4. Conclusion

The conclusion of this paragraph is that there are various obstacles faced during the implementation of risk management on the Training Ship Bung Tomo. These obstacles include human resources, budget, ship engine condition, availability of materials, and work methods. Therefore, steps are needed to optimize the implementation of risk management on the Training Ship Bung Tomo. Recommendations that can be considered by the management include proposing regulations from the Ministry of Transportation that govern the tasks and operational functions of training ships, building information technology for risk database, prioritizing budget planning for high-risk factors, evaluating and restructuring relevant Standard Operating Procedures (SOPs), proposing a budget for safety training on board, and conducting regular training to anticipate potentially high-risk situations. With the implementation of these recommendations, it is hoped that risk management on the Training Ship Bung Tomo can be optimized to ensure the safety and success of ship operations.

#### References

- [1] O. F. Knudsen and B. Hassler, "IMO legislation and its implementation: Accident risk, vessel deficiencies and national administrative practices," *Mar Policy*, vol. 35, no. 2, pp. 201–207, Mar. 2011, doi: 10.1016/j.marpol.2010.09.006.
- [2] O. A. Valdez Banda, F. Goerlandt, J. Montewka, and P. Kujala, "A risk analysis of winter navigation in Finnish sea areas," *Accid Anal Prev*, vol. 79, pp. 100–116, 2015, doi: 10.1016/j.aap.2015.03.024.
- [3] T. Ibn-Mohammed *et al.*, "A critical review of the impacts of COVID-19 on the global economy and ecosystems and opportunities for circular economy strategies," *Resour Conserv Recycl*, vol. 164, Jan. 2021, doi: 10.1016/j.resconrec.2020.105169.
- [4] J. Choi, S. Lee, and S. Kim, "Improving the current regulatory issues concerning training ships for maritime institutions: The South Korean case," *Asian Journal of Shipping and Logistics*, vol. 38, no. 3, pp. 125–134, Sep. 2022, doi: 10.1016/j.ajsl.2022.02.001.
- [5] M. Tomera, "Hybrid switching controller design for the maneuvering and transit of a training ship," *International Journal of Applied Mathematics and Computer Science*, vol. 27, no. 1, pp. 63–77, Mar. 2017, doi: 10.1515/amcs-2017-0005.
- [6] I. As Syafei, *Legal Reconstruction in Indonesia Based on Human Right*. 2019.
- [7] K. Kula and M. Tomera, "Control System of Training Ship Keeping the Desired Path Consisting of Straight-lines and Circular Arcs," *TransNav, the International Journal*

- on *Marine Navigation and Safety of Sea Transportation*, vol. 11, no. 4, pp. 711–719, Dec. 2017, doi: 10.12716/1001.11.04.19.
- [8] S. Jensen, M. Lützen, L. L. Mikkelsen, H. B. Rasmussen, P. V. Pedersen, and P. Schamby, “Energy-efficient operational training in a ship bridge simulator,” *Journal of Cleaner Production*, vol. 171. Elsevier Ltd, pp. 175–183, Jan. 10, 2018. doi: 10.1016/j.jclepro.2017.10.026.
- [9] W. Deling, W. Dongkui, H. Changhai, and W. Changyue, “Marine Autonomous Surface Ship - A Great Challenge to Maritime Education and Training,” *American Journal of Water Science and Engineering*, vol. 6, no. 1, p. 10, 2020, doi: 10.11648/j.ajwse.20200601.12.
- [10] P. Jedynek and S. Bąk, “Understanding Uncertainty and Risk in Management,” *Journal of Intercultural Management*, vol. 12, no. 1, pp. 12–35, Mar. 2020, doi: 10.2478/joim-2020-0030.
- [11] L. Smircich and G. Morgan, “Leadership: The Management of Meaning,” *J Appl Behav Sci*, vol. 18, no. 3, pp. 257–273, 1982, doi: 10.1177/002188638201800303.
- [12] N. Van Thuyet, S. O. Ogunlana, and P. Kumar Dey, “Risk management in oil and gas construction projects in Vietnam,” *International Journal of Energy Sector Management*, vol. 1, no. 2, pp. 175–194, 2007, doi: 10.1108/17506220710761582.
- [13] A. Y. Lusiandri, T. Cahyadi, . K., and K. L. W, “Failure analysis based on ship’s machinery maintenance system in Bung Tomo training ship,” *Research, Society and Development*, vol. 9, no. 8, Jul. 2020, doi: 10.33448/rsd-v9i8.6152.
- [14] M. Tadayon, M. Jaafar, and E. Nasri, “An Assessment of Risk Identification in Large Construction Projects in Iran \*,” 2012.
- [15] Francis. Stoessel, *Thermal safety of chemical processes : risk assessment and process design*. Wiley-VCH, 2008.
- [16] D. Wiratno, A. Mirianto, T. Cahyadi, Z. Zuhri, and N. V. Harini, “The design of the ship’s fuel estimation simulator uses a case study of the bung tomo trainer ship,” in *IOP Conference Series: Materials Science and Engineering*, IOP Publishing Ltd, Jan. 2021. doi: 10.1088/1757-899X/1010/1/012027.
- [17] A. Y. Lusiandri, T. Cahyadi, . K., and K. L. W, “Failure analysis based on ship’s machinery maintenance system in Bung Tomo training ship,” *Research, Society and Development*, vol. 9, no. 8, Jul. 2020, doi: 10.33448/rsd-v9i8.6152.
- [18] P. Aspers and U. Corte, “What is Qualitative in Qualitative Research,” *Qual Sociol*, vol. 42, no. 2, pp. 139–160, Jun. 2019, doi: 10.1007/s11133-019-9413-7.
- [19] S. Thorne, “Data analysis in qualitative research,” *Evidence-Based Nursing*, vol. 3, no. 3. pp. 68–70, 2000. doi: 10.1136/ebn.3.3.68.
- [20] D. Denyer and D. Tranfield, “Using qualitative research synthesis to build an actionable knowledge base,” *Management Decision*, vol. 44, no. 2, pp. 213–227, 2006, doi: 10.1108/00251740610650201.
- [21] H. Mohajan and H. K. Mohajan, “Munich Personal RePEc Archive Qualitative Research Methodology in Social Sciences and Related Subjects Qualitative Research Methodology in Social Sciences and Related Subjects,” 2018.
- [22] K. J. Colorafi and B. Evans, “Qualitative Descriptive Methods in Health Science Research,” *Health Environments Research and Design Journal*, vol. 9, no. 4, pp. 16–25, Jul. 2016, doi: 10.1177/1937586715614171.
- [23] R. Vedantam, C. L. Zitnick, and D. Parikh, “CIDeR: Consensus-based image description evaluation,” in *2015 IEEE Conference on Computer Vision and Pattern*

- Recognition (CVPR)*, IEEE, Jun. 2015, pp. 4566–4575. doi: 10.1109/CVPR.2015.7299087.
- [24] T. Nemoto and D. Beglar, “Developing Likert-Scale Questionnaires Campus Reference Data,” in *JALT2013 Conference Proceedings*, 2014, pp. 1–8.
- [25] S. E. Harpe, “How to analyze Likert and other rating scale data,” *Currents in Pharmacy Teaching and Learning*, vol. 7, no. 6. Elsevier Inc., pp. 836–850, Nov. 01, 2015. doi: 10.1016/j.cptl.2015.08.001.
- [26] C. Mircioiu and J. Atkinson, “A Comparison of Parametric and Non-Parametric Methods Applied to a Likert Scale,” *Pharmacy*, vol. 5, no. 4, p. 26, May 2017, doi: 10.3390/pharmacy5020026.
- [27] U. Kasanah, “THE IMPLEMENTATION OF GENERATING INTERACTION BETWEEN SCHEMATA AND TEXT STRATEGY IN TEACHING READING SKILL at 8 th GRADE MTs ASHRI JEMBER,” Universitas Islam Negeri Kiai Haji Achmad Siddiq, Jember, 2023. Accessed: Nov. 06, 2023. [Online]. Available: <http://digilib.uinkhas.ac.id/24347/>