

Hyperlocal Branding Strategy of Oil Products in Facing Market Competition After the National Cooking Oil Crisis

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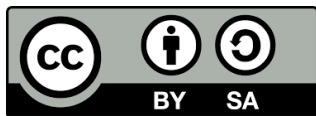
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Abstract

Adequate water depth is a critical factor in ensuring safe and efficient ship docking and undocking operations at shipyards. Effective dredging management is essential for maintaining operational reliability, preventing service disruptions, and optimizing shipyard performance. This study aimed to analyze the role of dredging management in supporting ship docking and undocking operations at PT Indonesia Marina Shipyard Gresik. A descriptive qualitative research approach was employed, with data collected through observations, interviews, and document analysis. The findings revealed that dredging management at PT Indonesia Marina Shipyard Gresik had not been implemented effectively due to several constraints, particularly high dredging costs and the company's limited financial capacity, which restricted the allocation of funds for routine dredging operations. Furthermore, the implementation of the four management functions—Planning, Organizing, Actuating, and Controlling (POAC)—remained suboptimal, adversely affecting the planning, coordination, execution, and monitoring of dredging activities. Consequently, inadequate dredging management disrupted ship docking and undocking operations by limiting the number of vessels that could access the shipyard and increasing docking delays. These operational constraints negatively affected service efficiency, shipyard productivity, and company revenue.



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INTRODUCTION

Maritime transportation plays a vital role in supporting trade, goods distribution, and passenger mobility between regions (Yowel, 2007; (Mulyati, 2023)). As an archipelagic nation, Indonesia relies heavily on efficient shipping and port operations to maintain economic connectivity. One essential activity in the maritime industry is ship docking and undocking, which involves transferring vessels into and out of docking facilities for maintenance, repairs, and inspections (Jain & Singh, 2003). These activities constitute an integral part of periodic vessel maintenance, ensuring seaworthiness and compliance with maritime safety standards (Triatmodjo, 2010; Triatmodjo, 1999).

According to Law No. 17 of 2008 concerning Shipping and Government Regulation No. 61 of 2009 concerning Ports, a port is a designated area with defined boundaries where governmental and commercial activities are conducted (Pratama & Wijaya, 2021). Ports accommodate vessel berthing, passenger embarkation and disembarkation, and cargo loading

and unloading. They are also equipped with terminals and supporting facilities to ensure maritime safety and security while facilitating intramodal and intermodal transportation (Mahendra, 2014).

Improving port services and maintaining navigational accessibility require effective dredging operations and, where appropriate, reclamation activities undertaken by government agencies or private entities. Minister of Transportation Regulation No. PM 125 of 2018 concerning Dredging and Reclamation, as amended by Minister of Transportation Regulation No. PM 53 of 2021, establishes regulatory requirements for these activities, emphasizing maritime safety, navigational security, and environmental sustainability.

Shipyards constitute an essential component of the national maritime transportation system by supporting vessel seaworthiness and operational safety through maintenance, repairs, and periodic docking and undocking operations. PT Indonesia Marina Shipyard Gresik, a shipyard operating within a port area, faces operational challenges associated not only with the technical capabilities of its facilities but also with the physical conditions of the surrounding waters (D. I. Bray, 1979; Putri & Santoso, 2023; Adlin, 2017).

Adequate water depth and favorable navigational conditions are essential for safe and efficient ship docking and undocking operations. Factors such as navigational channel depth, seabed conditions, and sediment accumulation directly influence vessel maneuverability and access to docking facilities. Excessive sedimentation can cause siltation, reducing available water depth and restricting vessel movements. Without systematic and periodic maintenance dredging, these conditions may disrupt shipyard operations, increase navigational safety risks, prolong operational procedures, and reduce cost efficiency.

At PT Indonesia Marina Shipyard Gresik, maintenance dredging has not been conducted regularly, contributing to sediment accumulation and reduced water depth in the shipyard's operational waters. These conditions have reportedly disrupted docking and undocking activities, restricted vessel access, and reduced the number of ships that can be accommodated for maintenance and repair services. Consequently, inadequate dredging management has become an operational concern that may affect service efficiency, vessel turnaround times, and shipyard productivity (Fitriani, 2023).

Effective dredging management requires systematic planning, organizational coordination, operational execution, and performance monitoring. Planning provides the foundation for establishing dredging schedules, allocating financial and technical resources, and determining operational priorities based on navigational requirements and sedimentation conditions. Integrating the management functions of Planning, Organizing, Actuating, and Controlling (POAC) into dredging operations can support the implementation of periodic maintenance dredging, improve compliance with applicable technical and safety requirements, and minimize operational risks associated with insufficient water depth. Accordingly, evaluating dredging management practices is essential for identifying operational constraints and developing strategies to improve ship docking and undocking performance (Ramadhan, 2022).

Previous studies have examined various technical aspects of ship docking and undocking, including shipyard facility design, vessel maneuvering procedures, and maritime operational safety standards. However, research specifically addressing the relationship between water depth conditions, sedimentation, dredging management, and the efficiency of docking and

undocking operations remains relatively limited, particularly within the Indonesian shipyard industry. This research gap highlights the need for a more comprehensive examination of how dredging management practices influence navigational accessibility and operational performance at shipyard facilities.

Based on these considerations, this study aimed to analyze dredging management practices and their implications for ship docking and undocking operations at PT Indonesia Marina Shipyard Gresik. Specifically, the research examined the planning, organization, implementation, and monitoring of dredging activities, identified factors constraining effective dredging management, and explored their consequences for vessel accessibility, operational efficiency, and shipyard service capacity. The central research question addressed how dredging management practices affected the efficiency and continuity of ship docking and undocking operations at PT Indonesia Marina Shipyard Gresik (Mahendra, 2016; Bray & Cohen, 2010).

This study was expected to provide both theoretical and practical contributions. Theoretically, it sought to expand the literature on maritime operations management by examining the relationship between dredging management and shipyard operational performance, particularly in the context of developing maritime economies. Practically, the findings were intended to provide recommendations for PT Indonesia Marina Shipyard Gresik and other shipyard operators regarding dredging planning, resource allocation, and operational coordination. These recommendations could support improvements in navigational accessibility, docking and undocking efficiency, service capacity, and the financial sustainability of shipyard operations.

METHOD

Type of Research

This study employed a descriptive qualitative research approach to examine dredging management practices and their implications for ship docking and undocking operations at PT Indonesia Marina Shipyard Gresik. The approach facilitated the systematic exploration and interpretation of operational conditions, management practices, and challenges associated with dredging activities (Sugiyono, 2018; Sinambela, 2014; Moleong, 2017) .

Research Design

This study uses a qualitative research design with a case study approach at PT Indonesia Marina Shipyard Gresik. This design was chosen because the researcher wanted to understand in depth the phenomenon of water dredging management and its impact on ship docking and undocking processes in a real-world field context.

Research Variables and Operational Definitions of Variables

Two variables are examined in this study:

1. Analysis of Water Dredging Management: Water dredging activities must be carried out regularly in accordance with operational standards that include the POAC functions (Planning, Organizing, Actuating, Controlling).
2. Smoothness of the Ship Docking and Undocking Process: The flow of the process for ships undergoing docking, from selecting the appropriate docking location, draining the water around the docking area, and installing supporting or shoring systems to ensure the ship remains stable during docking.

Research Population and Sample

The population of this study is all employees of PT Indonesia Marina Shipyard Gresik. The research sample consists of docking management employees at PT Indonesia Marina Shipyard Gresik, totaling 5 respondents.

Research Location and Time

This research was conducted at the Port of PT Indonesia Marina Shipyard Gresik from October 2025 to April 2026.

Data Collection Techniques

Data collection techniques are an important step in research because they are used to obtain the data needed for the research objectives and focus. In qualitative research, data collection is carried out directly in the field to obtain in-depth, accurate information that corresponds to actual conditions. The techniques used include:

- **Observation:** A data collection method involving direct observation of the research object to gain a direct picture of the conditions, activities, and behaviors related to dredging management and the docking process.
- **Interviews:** A data collection method involving direct questions and answers between the researcher and informants. In this study, semi-structured interviews were used, with a question guide as a reference, but informants were still given the freedom to express their opinions and elaborate further.
- **Questionnaire:** A method of gathering information by giving a list of questions to research respondents to obtain information related to the research.

Research Instruments

The researcher used research instruments during the data collection process to make the process easier and more systematic. The tools used include an interview guide and a questionnaire guide.

Data Analysis Techniques

Data analysis is the process of systematically searching for and organizing data obtained from field notes, records, and documentation. The stages of data analysis used in qualitative research include:

1. **Data Reduction:** A type of analysis that sharpens, directs, and discards unnecessary data. At this stage, data are identified, sorted into categories, summarized, coded, traced for themes, and documented in memos.
2. **Data Display:** At this stage, the data are presented separately between steps but organized after being reduced. After being categorized and reduced, the data are summarized and presented in an integrated manner.
3. **Conclusion Drawing/Verification:** Conclusions are reached from data that have been reduced and presented comprehensively.

Data Validity Techniques

To test the validity of the data, this study applies source triangulation by comparing information from various data collection techniques and conducting credibility tests through confirmation with relevant parties.

RESULTS AND DISCUSSION

General Overview of the Research Object

PT Indonesia Marina Shipyard Gresik is a company engaged in shipbuilding and ship repair, established in December 2004. The company was founded in response to the growing needs of Indonesia's maritime industry, with high-quality services, and aims to be a superior and trusted solutions partner for shipbuilding, repair, and maintenance, with a focus on expanding its business into the dredging sector.

Company Vision:

To become a leading center for shipbuilding, ship repair, and ship maintenance solutions.

To expand the scope of its business into dredging and national marine operations.

Company Mission:

1. To be a trusted partner in shipbuilding, repairing, and ship docking.
2. To meet the needs of the maritime industry in Indonesia through the provision of shipping services.
3. To develop competence in dredging activities to facilitate navigation along shipping channels.

The organizational structure of PT Indonesia Marina Shipyard Gresik is led by a President Director and a Vice President Director, who oversee three Directors, namely the Finance Director, the General Affairs Director, and the Operations Director. The Operations Director oversees three General Managers who are responsible for managing operational marketing, operational production (shipbuilding, repair, and docking), and service quality and technical standards in operations.

Research Results

Questionnaire Results

Based on the questionnaires completed by 5 respondents who are docking management employees, the following data were obtained:

Table 1. Analysis and Reduction of Questionnaire Data

No.	Question	Respondent A	Respondent B	Respondent C	Respondent D	Respondent E
1	Is dredging necessary?	Yes	Yes	Yes	Yes	Yes
2	Is it possible to carry out this dredging?	No	No	Yes	Yes	Yes
3	Is this dredging beneficial to the ship docking and undocking process?	Yes	Yes	Yes	Yes	Yes

From the results of the questionnaire data analysis, it can be concluded that:

- Five respondents (100%) stated that dredging is necessary.
- Three out of five respondents (60%) stated that dredging is feasible/possible to carry out, while two respondents (40%) stated that it cannot be carried out.

- Five respondents (100%) stated that dredging is beneficial and greatly affects ship docking and undocking processes.

Interview Results

The researcher used the interview method to obtain additional information so that this study would be more objective and its data more accurate. Interviews were conducted with 5 samples/respondents, consisting of docking management employees, with one question: "Has dredging management been carried out to date, and how does it affect the ship docking and undocking process at PT Indonesia Marina Shipyard Gresik?"

Table 2. Analysis and Reduction of Interview Data

No.	Respondent	Answer
1	A	Dredging management has not been carried out well to date because the operational cost of dredging is considered too high for the company's currently unstable financial condition, so port dredging is rarely done and, because of that siltation, the docking process has been hampered.
2	B	Dredging management has not been carried out and run well to date, thereby hampering the ship docking and undocking process.
3	C	Dredging management is not being carried out, so the result is port siltation, ships have difficulty berthing, and only ships of a certain height can enter, so the number of ships that can be docked has decreased.
4	D	Dredging management is not carried out, so siltation occurs and the docking process is delayed in its completion time because siltation hampers docking work.
5	E	Dredging management is not carried out, so siltation occurs, resulting in a reduced capacity of ships entering for docking.

Observation Results

The researcher conducted observations by directly viewing the condition of the docking port. At the time of observation, only three ships were able to dock, whereas more should have been able to be accommodated. The docking team also appeared to have difficulty carrying out the docking process for ships that were too large, which hampered the time needed to complete work on the ships.

Discussion

Analysis of POAC Functions in Dredging Management

Based on the research results from three methods (questionnaire, interviews, and observation), it was found that dredging management at PT Indonesia Marina Shipyard Gresik has not been running well to date. This can be analyzed through the POAC functions as follows:

1. Planning

Based on the interview results, no well-developed planning for routine dredging activities was found. Planning indicators such as setting dredging goals/objectives, periodic dredging strategies, preparing dredging work plans, and a dedicated dredging budget were not properly implemented. This indicates that the planning function in dredging management is not running as it should.

2. Organizing

Although the company's organizational structure has been well established, organizing specifically for dredging activities is not clearly visible. There is no specific division of tasks and functions for handling water dredging management. Resource allocation for dredging is also not optimally arranged because the high operational cost of dredging is the main obstacle.

3. Actuating (Implementation)

The research results show that the implementation of dredging activities is not running well. From the interview results, all respondents stated that dredging is not carried out routinely. The level of participation and productivity in dredging activities is very low because there is no initiative to carry out periodic dredging.

4. Controlling (Evaluation)

No clear performance standards for water dredging were found, nor periodic evaluation of water depth conditions, corrective action against siltation, or feedback from stakeholders regarding the impact of siltation on docking operations.

Impacts of the Failure of Dredging Management

The failure of dredging management to run well has a significant impact on ship docking and undocking processes, including:

1. Port Siltation

The accumulation of sediment on the water bed causes progressive siltation. This is in line with the theory put forward by (Bray & Cohen, S, 2010) that water dredging is a technical activity that plays a strategic role in maintaining the operational functions of ports and shipyards. Without routine dredging, siltation will continue to occur and disrupt shipyard operations.

2. Reduced Ship Capacity

Observation results show that only three ships were able to dock at the time of the study, whereas more should have been accommodated. Siltation means that only ships with a certain draft (the depth of the ship below the water surface) can enter the docking area. Ships with a deeper draft cannot access the docking facilities because of the risk of running aground.

3. Delays in Docking Work Time

The docking team experienced difficulties in carrying out the docking process for ships that were too large. Ship maneuvering became more difficult because of limited water depth. This caused docking work time to be longer than it should be.

4. Decline in Company Revenue

The reduced number of ships that can undergo docking and the increased work time have a direct impact on the company's revenue. The decline in work volume automatically reduces income from docking services.

Factors Causing the Failure of Dredging Management

Based on the research results, there are two main factors that cause dredging management to not run well:

1. High Operational Costs of Dredging

Dredging activities require very large operational costs, including the cost of renting or procuring dredgers, fuel costs, labor costs, dredged material disposal costs, and permitting costs. The magnitude of these costs is the primary consideration for the company in not carrying out routine dredging.

2. Unfavorable Company Financial Condition

The company's unstable financial condition means there is no budget allocation for dredging activities. The priority for the use of funds is diverted to other operational needs deemed more urgent.

Comparison with Previous Studies

The results of this study are in line with the research of (Putri & Santoso, B, 2023), entitled "Evaluasi Kegiatan Pengerukan terhadap Efektivitas Operasional Pelabuhan" (Evaluation of Dredging Activities on Port Operational Effectiveness), which shows that dredging improves port operational efficiency, particularly in maintaining the depth of the harbor basin and shipping channel so that ships can move safely.

This study also supports the findings of (Hidayat, 2020), who stated that dredging is able to maintain the depth of the shipping channel so that ships can operate safely and efficiently, and has a significant influence on the smoothness of ship traffic.

Likewise, the research of (Pratama & Wijaya, A, 2021) shows that high sedimentation causes waters to become shallow and hampers ship activities, so that dredging activities are necessary to keep ship operations running smoothly.

CONCLUSION

Dredging management at PT Indonesia Marina Shipyard Gresik had not been implemented effectively due to several operational and financial constraints. The primary constraint was the high cost of dredging operations, which limited the feasibility of conducting routine maintenance dredging. Additionally, the company's financial instability restricted the allocation of sufficient funds to support dredging activities.

The implementation of the four management functions—Planning, Organizing, Actuating, and Controlling (POAC)—in dredging management was also inadequate. Specifically, the company lacked a comprehensive dredging plan, a clearly defined organizational structure for coordinating dredging activities, regular implementation of maintenance dredging, and systematic monitoring and evaluation of water depth and sedimentation conditions.

Ineffective dredging management adversely affected ship docking and undocking operations. The resulting sediment accumulation and siltation reduced navigable water depth, restricted vessel access to docking facilities, decreased shipyard service capacity, and contributed to operational delays. These disruptions also negatively affected the company's revenue by limiting the number of vessels that could be accommodated for maintenance and repair services.

These findings were consistent with (Bray & Cohen, S, 2010), who emphasized the strategic importance of dredging activities in maintaining navigational accessibility and supporting the operational efficiency of ports and shipyards.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest in the conduct of the research, the writing, or the publication of this article.

AUTHOR CONTRIBUTION

All authors contributed to the preparation of this article. Author 1 (Widodo) contributed to research conceptualization, data collection and analysis, and interpretation of results and manuscript preparation, while the other authors contributed to review, editing, and final approval of the manuscript.

STATEMENT ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE

The authors state that they did not use generative artificial intelligence in the preparation of this article.

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