The Effect of Strategic Environment Change toward Indonesia Maritime Security: Threat and Opportunity

I Nengah Putra A.1,2, Abdul Hakim1, Sholeh H. Pramono1 and Amin S. Leksono1

1 Brawijaya University, Malang 65145, Indonesia.
2 Indonesian Naval Technology College, STTAL, Surabaya 60187, Indonesia.

ORCID: 0000-0002-6799-691X, 0000-0002-5637-279X, 0000-0001-5558-9770, 12445990300

Abstract

Indonesia is the world’s largest archipelagic country. Indonesia lies across the Equator and is strategically located between the continents of Asia and Australia and between the Pacific Ocean and the Indian Ocean. Today’s, environmental change gives effect to relations among the littoral states and user states, which it can be increasing disputes or conflict among two or more neighboring countries. Because of that, Indonesia always make effort to increasing maritime security area for handling about every threats and opportunity in strategic analysis. The aim of this paper is giving analysis about the effect of strategic environmental change toward Indonesia maritime security using PESTEL analysis approach. PESTEL analysis approach measures factor elements which influences in maritime security of Indonesia. Based on PESTEL analysis for Indonesia maritime security, its has several influences consists of political factor has six influences, economic factor has six influences, social factor has five influences, technological factor has three influences, environmental factor has four influences, legal (Defence and security) factor has seven influences. It is resulted 16 point of threats and 11 point of opportunities. The main factor of threat is Legal (defence & security) analysis. The weakness factor of threat is technological analysis. The main factor of opportunity is economic analysis. The weakness factor of opportunity is political analysis.

Keywords: Environmental Change, Maritime Security, PESTEL Analysis, Threat, Opportunity

INTRODUCTION

Indonesia is the world’s largest archipelagic country comprising around 18.108 islands comprises 2.8 million square kilometres of water, 1.826.440 square kilometres of land, the country’s area stretches to 7.9 million square kilometres (1), with coastline 95.181 kilometres (2). Indonesia has 13.466 islands that have named, 5.8 million square kilometres sea area or about 70 percents of the total area of the country (3).

According McKinsey Global Institute (11) Indonesia is on course to become the seventh-largest economy in the world in 2030 from the 16th largest today. Between now and 2030, Indonesia will be home to an estimated 90 million additional consumers with considerable spending power. But Indonesia is at a critical juncture. The archipelago economy is confronted by many major challenges in the period to 2030.
Indonesia can take in three key sectors (consumer services, agriculture and fisheries, resources) to boost productivity and remove constrains on growth.

Today’s, environmental change gives effect to relations among the littoral states and user states, which it can be increasing disputes or conflict among two or more neighboring countries. Because of that, Indonesia always make effort to increasing maritime security area for handling about every threats and opportunity in strategic analysis.

Strategic analysis is the first of the basic stages of strategic management and involves the analysis of current factors relevant to the environmental within which the company carries out its operations (12).

According Yuksel (12), the concept of environment involves far, near and internal environments, including all types of factors related to the activities of the company. In term of the company, this comprises both internal and external environment. The external environment comprises the macro environment and sectoral environment. The macro environment of a company consists of the political, economic, socio-cultural, technologic, ecologic, legal factors that directly or indirectly affect the operations of the company.

The aim of this paper is giving analysis about the effects of strategic environmental change toward Indonesia maritime security using PESTEL analysis approach. PESTEL Analysis approach measures factor elements which influences maritime security of Indonesia.

PESTEL was developed by Aguilar as a tool and technique for scanning the business environment (13). PESTEL analysis’s objective is to identify and study as many external factors as possible (14). PESTEL analysis is a useful tool for understanding risk associated with market growth or decline, and as such the position, potential and direction for a business or organisation (15). PESTEL analysis is used to analyze international companies as well as industries that are engaged in exporting and depend on international markets (16).

The inscriptive benefit from this paper is giving academic contribution in development theories which concerning development of maritime security.


This paper is organized as follows. Section 2 reviews the basic concept of PESTEL analysis, materials and steps of paper. Section 3 gives result and analysis of this paper. Finally, in section 4 describes paper conclusion.

MATERIALS/METHODOLOGY

PESTEL Analysis.

a. Definition of PESTEL.

According Menet (26), to identify possible opportunities and threat, the company must perform a detailed survey of its environment. One of techniques often used to identify the external opportunities and threat is the PESTEL analysis.

Kotler (28) claimed that the PESTEL analysis is a useful strategic tools for understanding market growth or decline, business position, a company’s potential for development and direction for operator.

PESTEL analysis also ensure that company’s performance is aligned positively with the powerful forces of change that are affecting business environment (29). Therefore PESTEL analysis can be applied to get a better comprehension of what affect business model (30).

PESTEL analysis has two basic functions for company. First is that it allows identification of the environment within the company operates. The second is that it provides data and information that will enable the company to predict situations and circumstances that it might encounter in future (23).
The PESTEL analysis uses when (31):

1) Launching a new product or service.
2) Entering a new region or country.
3) Considering a new route to the market.
4) Working as part of a strategic project team.

b. Process of PESTEL analysis.

The process of PESTEL analysis is a relatively simple, such as (31):

1) Brainstorm and list key issues that are outside the organization’s control.
2) Broadly identify the implications of each issue.
3) Rate its relative importance to the organization (e.g. critical, extensive, important, significant, moderate or insignificant).
4) Rate the likelihood of it occurring (e.g. certainty, extremely likely, likely, potential, remote possibility, or will not transpire).
5) Briefly consider the implications if the issue did occur.

c. Correlation coefficient.

Correlation, also called as correlation analysis, is a term used to denote the association or relationship between two (or more) quantitative variables (32).

<table>
<thead>
<tr>
<th>Score</th>
<th>Strength of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>very low</td>
</tr>
<tr>
<td>2</td>
<td>weak to low</td>
</tr>
<tr>
<td>3</td>
<td>moderate to low</td>
</tr>
<tr>
<td>4</td>
<td>moderate</td>
</tr>
<tr>
<td>5</td>
<td>strong</td>
</tr>
<tr>
<td>6</td>
<td>very strong</td>
</tr>
</tbody>
</table>

Indonesian National interest.

According to Drew and Snow (33), national interests are those things determined by political authorities to be of great importance to the country and that from the basis for the strategies developed to attain them. Nasional interest consists of four apart such as : survival, vital, major, peripheral. According Susanto (34) national interest consist of four apart likely survival interest, vital interest, important interest, marginal interest.

Indonesia government was announced to priorities peace, maintain stability, practise self-restraint, and respect international law, particularly the UN convention on 1982 Law of the Sea (35).

President Joko Widodo has announced a new top priority in terms of foreign policy concern emphasizing on the importance of maritime power through officially announced vision of Global Maritime Axis. Indonesia is expected to play a more contributive role in the formation of regional security and economic (19).


Arnold Wolfers (18) describe national security as an ambiguous symbol which can be deceptive and possibly
meaningless when employed as a policy label. According Susanto (34), national security is A kind of situation and condition also feeling secure and peaceful of the nation also state in the frame of Indonesia.

Maritime security as a process of maintaining stability in the international system on, over, under and from the sea (18). The five perspective of maritime security are (1) security of the sea itself (2) ocean governance (3) maritime border protection (4) military activity at sea (5) security regulation of the maritime transportation system.

Indonesia will broaden the opportunities to build a modern maritime industry and for maritime security. The strategic that will provide ample opportunity for Indonesia to actively play an important role regionally and global (22).

Global Maritime Axis Policy.

Indonesia’s idea of a Global Maritime Axis is an extension of the dynamic equilibrium philosophy important to maintaining peace and security in the region and should be the new paradigm in the Asia-Pacific (22).

Joko Widodo further elaborated on his “maritime axis” doctrine by listing the five pillars (36), namely (1) revival of Indonesian maritime culture and ultimately, archipelagic identity; (2) development of oceans and fisheries; (3) improving maritime economy; (4) maritime diplomacy to address illegal fishing and other security threats; (5) boosting Indonesia’s maritime defences. The first pillar speaks to national pride, a hallmark of the Jokowi administration’s arrival with a strong popular mandate. The second and third seek to foster economic growth. The fourth and fifth focus on securing Indonesia’s borders and resources against both state and non-state intruders (37).

Targets.

The target is to find the effect of strategic environment change: Threat and Opportunity.

RESULT and DISCUSSION

Based of PESTEL analysis approach, therefore resulted stage of threats and opportunities for organization or other entity in Indonesia maritime security one that is mapped of severally factors such as political, economy, social, technological, environmental, legal.

PESTEL Analysis.

a. Political factor has six influences, such as :

1) Maritime boundary zones.

2) U.S. Policy : Balancing and Re-Balancing in Asia and other the Great Power.

3) National political culture and System consolidation.

4) National maritime policy.

5) Complexitas of national maritime companies.

6) Regional autonomy.

Global Maritime Axis Policy.

Indonesia’s idea of a Global Maritime Axis is an extension of the dynamic equilibrium philosophy important to maintaining peace and security in the region and should be the new paradigm in the Asia-Pacific (22).

Joko Widodo further elaborated on his “maritime axis” doctrine by listing the five pillars (36), namely (1) revival of Indonesian maritime culture and ultimately, archipelagic identity; (2) development of oceans and fisheries; (3) improving maritime economy; (4) maritime diplomacy to address illegal fishing and other security threats; (5) boosting Indonesia’s maritime defences. The first pillar speaks to national pride, a hallmark of the Jokowi administration’s arrival with a strong popular mandate. The second and third seek to foster economic growth. The fourth and fifth focus on securing Indonesia’s borders and resources against both state and non-state intruders (37).

Targets.

The target is to find the effect of strategic environment change: Threat and Opportunity.

RESULT and DISCUSSION

Based of PESTEL analysis approach, therefore resulted stage of threats and opportunities for organization or other entity in Indonesia maritime security one that is mapped of severally factors such as political, economy, social, technological, environmental, legal.

PESTEL Analysis.

a. Political factor has six influences, such as :

1) Maritime boundary zones.

2) U.S. Policy : Balancing and Re-Balancing in Asia and other the Great Power.

3) National political culture and System consolidation.

4) National maritime policy.

5) Complexitas of national maritime companies.

6) Regional autonomy.

Table 2: Political Factor Analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime Boundary Zones</td>
<td></td>
<td></td>
<td>Conflict of territorial sea, EEZ, and maritime boundary zone among Indonesia and other’s countries in region area.</td>
<td>6</td>
</tr>
<tr>
<td>U.S. Policy : Balancing and Re-Balancing in Asia and other the Great Power</td>
<td></td>
<td></td>
<td>Tensions grow with increasing militarization in region area, it gives very potential to armed conflict.</td>
<td>6</td>
</tr>
<tr>
<td>National political culture and System consolidation</td>
<td></td>
<td></td>
<td>Transition and consolidation of democracy system, Breakthrough in national political system</td>
<td>3</td>
</tr>
<tr>
<td>National maritime policy</td>
<td></td>
<td></td>
<td>Complexity and intersecting in government policy.</td>
<td>6</td>
</tr>
<tr>
<td>Complexitas of national maritime companies</td>
<td></td>
<td></td>
<td>Authorities and decision making for the government institute.</td>
<td>5</td>
</tr>
<tr>
<td>Regional autonomy</td>
<td></td>
<td></td>
<td>Editorial ego of coordination between central government, regional or local government.</td>
<td>3</td>
</tr>
</tbody>
</table>

b. Economic factor has six influences, such as :

1) Prospect of economic growth in Asia.

2) Economic growth and development in China.

3) The establishment of the ASEAN Economic Community (AEC) in 2015.

4) Indonesia economic growth.

5) Marine resources : underwater and surface area.

6) Indonesia defence budget.

Table 3: Economic Factor Analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect of economic growth in Asia</td>
<td></td>
<td></td>
<td>Increasing national economy and cooperation among countries</td>
<td>4</td>
</tr>
<tr>
<td>Economic Growth and Development in China</td>
<td></td>
<td></td>
<td>Ready to be new frequenty and delicate competition with United State as a old hegemony</td>
<td>5</td>
</tr>
<tr>
<td>The establishment of the ASEAN Economic Community (AEC)</td>
<td></td>
<td></td>
<td>Increasing national economy</td>
<td>4</td>
</tr>
<tr>
<td>Indonesia economic growth</td>
<td></td>
<td></td>
<td>Align with military expenditure</td>
<td>6</td>
</tr>
<tr>
<td>Marine resources. underwater and surface area</td>
<td></td>
<td></td>
<td>As a national economy resources</td>
<td>6</td>
</tr>
<tr>
<td>Indonesia defence budget</td>
<td></td>
<td></td>
<td>Increase of maritime security resources</td>
<td>6</td>
</tr>
</tbody>
</table>
c. Social factor has five influences, such as:
1) Amount of Indonesia population.
2) Population structure by age group.
3) Population evenness.
4) Awareness of maritime cultural.
5) People’s culture in state borders.

Table 4: Social Factor Analysis.

<table>
<thead>
<tr>
<th>PESTEL factors analysis</th>
<th>Correlation Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Indonesia population</td>
<td>+</td>
<td>-</td>
<td>Potential of human resource.</td>
<td>3</td>
</tr>
<tr>
<td>Population structure by age group</td>
<td>+</td>
<td>-</td>
<td>Incorporation with acceptance of threat construction building by government and Navy</td>
<td>4</td>
</tr>
<tr>
<td>Population evenness</td>
<td>-</td>
<td>+</td>
<td>Discrepancy of human resource potential in every region</td>
<td>5</td>
</tr>
<tr>
<td>Awareness of maritime culture</td>
<td>+</td>
<td>-</td>
<td>Re-organization of cultures and nation perspective</td>
<td>6</td>
</tr>
<tr>
<td>People’s culture in state borders</td>
<td>-</td>
<td>+</td>
<td>Discrepancy of conflict in boundary area</td>
<td>2</td>
</tr>
</tbody>
</table>

d. Technological factor has three influences, such as:
1) Information technology development in maritime.
2) Ownership of maritime information technology.
3) Cyber attack to maritime information.

Table 5: Technological Factor Analysis.

<table>
<thead>
<tr>
<th>PESTEL factors analysis</th>
<th>Correlation Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Maritime Information Technology</td>
<td>+</td>
<td>-</td>
<td>It is related with interoperability for national maritime security in every stakeholder</td>
<td>6</td>
</tr>
<tr>
<td>Ownership of Maritime Information Technology</td>
<td>+</td>
<td>-</td>
<td>It is related with interoperability for national maritime security in every stakeholder</td>
<td>6</td>
</tr>
<tr>
<td>Cyber Attack toward maritime Information</td>
<td>-</td>
<td>+</td>
<td>It gives impact to national interest</td>
<td>6</td>
</tr>
</tbody>
</table>

f. Legal (Defence and security) factor has seven influences, such as:
1) Conflict in Asia.
2) Military Competition and Arms-Racing in Asia.
3) Military Expenditure in Indonesia.
4) The power of Indonesia Navy.
5) Pirates in Indonesia seas.
6) Transnational crime and other’s.
7) Illegal, unreported and unregulated (IUU) of fishing.

Table 6: Environmental Factor Analysis.

<table>
<thead>
<tr>
<th>PESTEL factors analysis</th>
<th>Correlation Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic condition for shipping traffic</td>
<td>+</td>
<td>-</td>
<td>Increasing on potential of security and crisis towards national maritime area</td>
<td>6</td>
</tr>
<tr>
<td>Geographic condition for state borders</td>
<td>+</td>
<td>-</td>
<td>Potention conflict among others countries</td>
<td>6</td>
</tr>
<tr>
<td>Geographic condition for fishing ground</td>
<td>-</td>
<td>+</td>
<td>Increasing on potential of security and crisis towards national maritime area</td>
<td>6</td>
</tr>
<tr>
<td>Geographic condition for disaster zones</td>
<td>-</td>
<td>+</td>
<td>Maritime power not only for secure of sea area, but also as a evacuation way to disaster or sea accident</td>
<td>4</td>
</tr>
</tbody>
</table>

e. Environmental factor has four influences, such as:
1) Geographic condition for shipping traffic.
2) Geographic condition for state borders.
3) Geographic condition for fishing ground.
4) Geographic condition for disaster zones.

Table 7: Legal Factor Analysis.

<table>
<thead>
<tr>
<th>PESTEL factors analysis</th>
<th>Correlation Opportunity</th>
<th>Threat</th>
<th>Explanation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict in Asia</td>
<td>+</td>
<td>-</td>
<td>It gives impact to national interest</td>
<td>6</td>
</tr>
<tr>
<td>Military competition and Arms-Racing in Asia</td>
<td>+</td>
<td>-</td>
<td>The national interest and aim are not addressed to military force</td>
<td>4</td>
</tr>
<tr>
<td>Military Expenditure in Indonesia</td>
<td>+</td>
<td>-</td>
<td>It gives relation with resource and capability of navy</td>
<td>6</td>
</tr>
<tr>
<td>The power of Indonesia Navy</td>
<td>+</td>
<td>-</td>
<td>It gives impact to national interest</td>
<td>6</td>
</tr>
<tr>
<td>Pirates in Indonesia Seas</td>
<td>+</td>
<td>-</td>
<td>It gives impact to national interest</td>
<td>6</td>
</tr>
<tr>
<td>Transnational crime and others</td>
<td>+</td>
<td>-</td>
<td>It gives impact to national interest</td>
<td>6</td>
</tr>
<tr>
<td>Illegal, unreported and unregulated (IUU) of fishing</td>
<td>+</td>
<td>-</td>
<td>It gives impact to stability of region and national interest</td>
<td>6</td>
</tr>
</tbody>
</table>
Coefficient Correlation of PESTEL Analysis.

Based on figure 4 upon, described that the threat of Indonesia maritime security is very strong than the opportunity. Amount of threat factor more than opportunity factor.

The main factor of threat is Legal (defence & security) analysis. The weakness factor of threat is technological analysis.

The main factor of opportunity is economic analysis. The weakness factor of opportunity is political analysis.

**Threat.**

Based of PESTEL analysis upon, it resulted 16 point for threats, such as:

a. Conflict of territorial sea, EEZ and maritime boundary zone among Indonesia and other’s countries in region area.

b. Tensions growth with increasing militarization in region area. It gives very potential to armed-conflict.

c. Complexity and intersecting in government policy.

d. Authorities and decision making for the government institute.

e. Sectoral’s ego of coordination between central government, regional or local government.

f. Ready to be new hegemony and take competition with United State as a old hegemony.

g. Increase of maritime security resources.

h. Discrepancy of human resource potention in every region.

i. Potention of conflict in boundary area.

j. Increasing on potention of security and crisis toward national maritime area. Many of interests form other state that across in national maritime area.

k. Potention conflict among others countries.

l. Technological factor related with inter-operability for national maritime security in every stakeholder, especially from cyber attack toward maritime information.

m. Conflict in Asia gives impact for national interest.

n. The national interest and aim are not addressed to military force.

o. Military expenditure gives relation with resource and capability of navy.

p. Maritime crime gives influence to stability condition of region and national interest.

**Opportunity.**

Based of PESTEL analysis upon, it resulted 11 point for opportunities, such as:

a. Transition and consolidation of democracy system. Breakthrough in national political system.

b. Increasing national economy and cooperation among countries.

c. The establishment of AEC increases national economy

d. Indonesia economic growth aligned with military expenditure.

e. Marine resources as a national economy resources.
f. Amount of national population is a potential of human resource.
g. Re-orientation of culturizes and nation perspective.
h. Geographic condition increases on potentiation of security and crisis toward national maritime area.
i. Development of maritime power not only for secure of sea area, but also as a evacuation way to disaster or sea accident.
j. Technological factor related with inter-operability for national maritime security in every stakeholder.
k. The power of Navy gives impact to national interest.

CONCLUSION

a. Based on PESTEL analysis for Indonesia maritime security, its has several influences consists of political factor has six influences, economic factor has six influences, social factor has five influences, technological factor has three influences, environmental factor has four influences, legal (Defence and security) factor has seven influences.
b. Based of PESTEL analysis upon, it resulted 16 point of threats influence and 11 point of opportunities influence.
c. Based on PESTEL Analysis Map, the threat of Indonesia maritime security is very strong than the opportunity. Amount of threat factor more than opportunity factor.
d. The main factor of threat is Legal (defence & security) analysis. The weakness factor of threat is technological analysis.
e. The main factor of opportunity is economic analysis. The weakness factor of opportunity is political analysis.

ACKNOWLEDGEMENT

This paper has been supported by Brawijaya University and Indonesia Naval Technology College (Sekolah Tinggi Teknologi Angkatan Laut/SITTL).

REFERENCES:

[7]. The Unprecedented Expansion of The Global Middle Class. Kharas, Homi. 2017, Global Economy and Development.
[15]. Tacit, Intellect. PESTEL Analysis Overview. s.l. : Tacit


