ANALYSIS OF INDONESIAN WARSHIPS SELECTION IN SUPPORTING MARITIME TASK FORCE (MTF) IN LEBANON IN SUPPORTING THE MISSION FOR WORLD PEACE

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ABSTRACT

World Peace Forces, or what we often call the Garuda Contingent (KONGA), is the Indonesian National Army troops assigned as troops peace in another country. Indonesia began to participate in sending forces as part of the UN peacekeeping force in 1957. Indonesia sent the Warship of the Republic of Indonesia (KRI) to maintain peace under the United Nations flag at the United Nations Interim Forces Mission in Lebanon (UNIFIL) for the first time in 2009. This activity aimed to maintain security stability in the Lebanese area. This was because Lebanon was one of the countries that were experiencing conflict in the Middle East area. So far, the Indonesian Navy has sent twelve MTF Task Force to Lebanon with using six KRI, namely KRI Diponegoro-365, KRI Sultan Hasanudin-366, KRI Sultan Iskandar Muda-367, KRI Frans Kaisiepo-368, KRI Bung Tomo-357, and KRI Usman Harun-359. In the previous section, the Indonesian Navy still has Van Speijk Class as the frigate warship. And Indonesian Navy also has PKR 10514 as the new frigate class. Along with the continuity of the task force, consideration was needed in determining the warship that continues the mission. It was necessary to weigh the criteria using the Analytical Hierarchy Process (AHP) method in determining the warships that meet these criteria. The following selected warships would continue the warships that have previously carried out the maritime task force mission in Lebanon.

Keywords: *Maritime Task Force (MTF), Indonesian Warship selection, Analytical Hierarchy Process (AHP).*

1. INTRODUCTION

World Peace Forces, or what we often call the Garuda Contingent (KONGA), is the Indonesian National Army troops assigned as troops peace in another country. Indonesia began to participate in sending forces as part of the UN peacekeeping force in 1957. The World Peace Force is divided into 2, namely the Army Task Force (ATF) and the Maritime Task Force (MTF). And for the division of its territory consisting of several countries, Haiti, Congo, Sudan, and Lebanon. The delivery consists of 3 forces, namely, the Indonesian Army, the Indonesian Navy and the Indonesian Air Force; the three forces are members of the Army Task Force or ground troops. Meanwhile, the Maritime Task Force comes explicitly from the Indonesian Navy. The matter is because the Maritime Task Force consists of an Indonesian Warship inside it.

The Garuda XXVIII contingent (Indo MTF Force) is Indonesia's contribution to United Nations activities in Lebanon. This activity itself starts on 16 March 2009 by sending KRI Diponegoro 365 to join the MTF (Maritime Task Force) UNIFIL. This is the first time Indonesia's participation in the task force MTF, with the first task force named Konga XXVIII-A, which until now has existed 11 MTF Task Force from Indonesia dispatched to Lebanon. This activity aims to maintain security stability in the Lebanese area. This is because Lebanon is one of the countries that is experiencing conflict in the Middle East area. And currently, the main task of the MTF Task Force in Lebanon is to prevent the flow of weapons from entering Lebanon by sea. In addition, the MTF Task Force has a supporting task in evacuating Indonesian citizens and victims from

local civilians to the nearest country, in this case, Turkey and Cyprus, if there is conflict in Lebanon.

In operation, the MTF Task Force is the same as the ATF Task Force, which is located under the Indonesian National Army Headquarters (Mabes TNI), in this case, the Mission Center Maintenance of Peace for the Indonesian National Army (PMPP). So, it's deep the operation of this Task Force starts from the need for personnel support to The Task Force material support comes from TNI Headquarters. Meanwhile, the TNI Headquarters itself is in its implementation has the full support of the United Nations (UN) as compensation for TNI's participation in this activity.

The Indonesian Navy contributes to world peace. The form of this contribution can be seen from sending approximately 1828 Indonesian Navy troops to Lebanon to help guard the sovereignty of the country. They are members of the Maritime Task Force (MTF) TNI Garuda Contingent XXVIII-C / United Nations Interim Force in Lebanon (UNIFIL). In the total UNIFIL MTF sent by the Indonesian Navy, there are two types of KRI: KRI type corvette class SIGMA (Ship Integrated Geometrical Modularity Approach) and KRI type MRLF (Multi-Role Light Frigate). But, by developing the Indonesian Navy in the complete filling of Minimum Essential Force (MEF), the Indonesian Navy has been added some frigate ships. They are PKR 10514 class. And in the previous section, Indonesia still has Van Speijk Warship class that still suitable to be delivered to this mission. So, from this kind of condition, we have to determine which warship that will be used as the main warship in the next Maritime Task Force (MTF).

On the other hand, there are several requirements for warships that can be sent on MTF missions. The KRI criteria or requirements that can be sent to the Unifil MTF Task Force, among others:

a. Able to operate Heli and then carry 1unit Heli BO-105 NV-414
b. Able to carry out Search and Rescue (SAR)
c. Able to carry out RAS (Filling BBM at sea)
d. Has class I health facilities
e. Has a real-time Combat Management System (CMS).
f. Able to carry out self-protection
g. Has the ability to identify friends/foes
h. Able to provide assistance to the Lebanese Navy

In this research, we try to predict and help the Indonesian Navy to decide the next ship that probably to be used in the Maritime task Force (MTF) in Lebanon. And in this research, we will use Analytical Hierarchy Process (AHP) to decide it.

2. LITERATURE REVIEW

2.1 United Nation (UN) Missions

Since 1957 Indonesia has been actively invited to participate in sending a contingent of peacekeeping troops under the UN flag, but the troops sent are ground aspect troops which contain the composition of the combined dimensions of the Indonesian Army, Navy and Air Force. Meanwhile, the TNI MTF Task Force only consists of Indonesian Navy Soldiers manning the KRI. This clearly shows the appreciation and trust of the international community for Indonesia's maritime defence forces. The achievements of the Indonesian Navy are a manifestation of the demands for the duties set out in article 9 letter c of Law Number 34 of 2004 concerning the TNI.

2.2 Maritime Task Force (MTF)

The implementation of government policies for sending the TNI MTF task force to the UNIFIL mission will continue in accordance with the agreement in the Memorandum of Understanding / MOU between the Indonesian Government as a Troop Contributing Country / TCC and the UN, whose deadline is not stated. Until now, the Indonesian Government continues to decide to send KRI on this mission. With the existence of an MOU from the UN, the Indonesian Government, in this

case appointing the Indonesian Navy as the executor, must determine or choose the KRI to be used in carrying out the mission.

In 2009, for the first time, Indonesia sent the Republic of Indonesia Battleship (KRI) on a peacekeeping mission under the United Nations flag at the United Nations Interim Forces Mission in Lebanon (UNIFIL) mission involving marine elements KRI Diponegoro-365 (MTF-1). Furthermore, in 2010 sent the Indonesian Konga XXVIII-B / UNIFIL 2010 Maritime Task Force KRI Frans Kaisepo-368 (MTF-2), in 2011 sent the Konga XXVIII-C / UNIFIL TNI Maritime Task Force 2011 KRI Sultan Iskandar Muda-367 (MTF-3), and in 2012 sent the Maritime Task Force Konga XXVIII-D / UNIFIL 2012 KRI Sultan Hasanuddin-366 (MTF-4), the second time the KRI Diponegoro Task Force Maritime Task Force (MTF) Konga XXVIII-E / UNIFIL 2013. The Maritime Task Force (MTF) Garuda Contingent (Konga) XXVIII-F / United Nation Interim Force In Lebanon (UNIFIL) in 2014 was KRI Frans Kaisiepo-368.

In fact, in 2015, the KRI Diponegoro-365 class SIGMA (Ship Integrated Modularity Approach) corvette ship will be replaced with the KRI Bung Tomo-357 class KRI-357 KRI frigate to be sent to carry out duties in Lebanon. The time that lasted for more than five years, the KRI election only took turns from the KRI SIGMA and MRLF, which were just purchased from England in 2015, so this resulted in less efficiency in various aspects, including optimization of sensors, platform, fuel efficiency, accommodation, weaponry, personnel and support equipment.

2.3 Minimum Essential Force (MEF)

By the national defence policy set by the Ministry of Defense, the development of the Indonesian Navy's strength is bound to the Minimum Essential Force (MEF). MEF is a force designed to have a particular ability (Capability Design) to face threats to protect and protect the country's sovereignty, the integrity of the Republic of Indonesia and the safety of the entire nation. The possible risks that will be faced when the threat is greater than the capability designed for national and international goals and interests.

In a world peace mission, it is necessary to select the right KRI to carry out the task in accordance with the MOU issued by the United Nations for ships that will participate in carrying out the mission. Taking into account the human rights functions, policies and financial conditions of the country, there are several steps that can be taken to meet the MEF that has been established either by maintaining defence equipment or utilizing new procurement. For this reason, the KRI, which is part of the TNI AL's leading defence equipment needed, is expected to meet the requirements issued by the UN both from an operational, technical and administrative perspective so that the KRI's human functions in carrying out this mission can be fulfilled.

2.4 Multiple Criteria Decision Making (MCDM).

Multiple Criteria Decision Making (MCDM) is a decision-making method based on theories, processes, and analytical procedures that involve uncertainty, dynamics, and aspects of various criteria. In conventional optimization methods, coverage is generally limited to only one selection criterion (mono criteria), where the selection taken is the choice that best meets the objective function. However, the problems faced, especially those of a more practical nature, are not that simple. There are times when subjective considerations must be incorporated into the decision-making process. This condition causes the conventional optimization approach to no longer to be used.

MCDM provides an alternative to taking advantage of objective and subjective considerations as a basis for decision making. The problem with multiple criteria may be defined as a situation where a standard becomes a consideration for selecting an alternative that is used to:

a. Determine the best alternative or a set of the best options (choice problem).

b. Ranking the alternatives from best to worst (ranking problem), or divide the alternative set into alternative subsets based on multiple rules (sorting issues).

2.5 Analytical Hierarchy Process (AHP).

The Analytic Hierarchy Process (AHP) is a theory developed by Thomas Saaty for measuring intangible factors through paired comparisons using judgments from a 1 to 9 fundamental scale and resulting in priorities for the elements. It can be applied to both tangibles and intangibles and is used for decision making by structuring a hierarchical model with a goal, criteria (sub-criteria), and alternatives than making pairwise comparison judgments about the dominance of groups of elements in a level below concerning the component from which they are connected in the story above. In the end, the priorities of all the parts are synthesized to rank the alternatives. These simple hierarchies can be extended to multi-level decision models with rankings of benefits, opportunities, costs and risks.

The AHP has been applied in many areas, including resource allocation and conflict resolution. There are numerous intangibles that have a great impact that we must first measure before we can include them as variables. What is most significant is that intangibles can only be measured through expert judgment and only relative to the goals of concern in a particular situation. In this study, AHP is used to measure the intensity or weight of each leading aspect of each technology component by analyzing using pairwise comparisons of each criterion. Three basic principles of the AHP process: (Saaty, 1993).

a. Describe and describe a hierarchy called arranging hierarchically, which is to break down the problem into separate elements.

b. Differentiation of priorities and systems, which is called priority setting, is to determine the level of elements according to their relative importance.

c. Logical consistency, which ensures that all elements are grouped logically and ranked consistently according to a logical criterion.

2.6 Pairwise Comparison

Pairwise comparison based on the judgment of the decision-maker by assessing the importance of an element compared to other factors. This comparison value is determined by the quantitative scale proposed by Saaty (1994). This scale starts from 1 to 9. Comparisons are made until a total judgment is obtained of n x [(n-1) / 2] pieces, where n is the number of elements being compared.

Table 1. Scale of Intensity of Importance

Intensity of Importance	Definition
1	Equally important
2	Between equally and moderately important
3	Moderately important
4	Between moderately and strongly important
5	Strongly important
6	Between strongly and very strongly important
7	Very strongly important
8	Between very strongly and extremely important
9	Extremely important

3. RESULTS AND DISCUSSION

3.1 Identification of Criteria and Sub criteria.

This section is carried out utilizing brainstorming/interviews with the speakers. The resource persons consisted of experts from:

a. Operations Staff of Indonesian Armed Forces Peacekeeping Center (PMPP)

b. Operations Staff of Indonesian Navy Headquarter

c. Planning Staff of Indonesian Navy Headquarter

d. Logistics Staff of Indonesian Navy Headquarter.

The result of this stage is the identification of the initial criteria and sub-criteria in determining the type of warship, which are as follows.

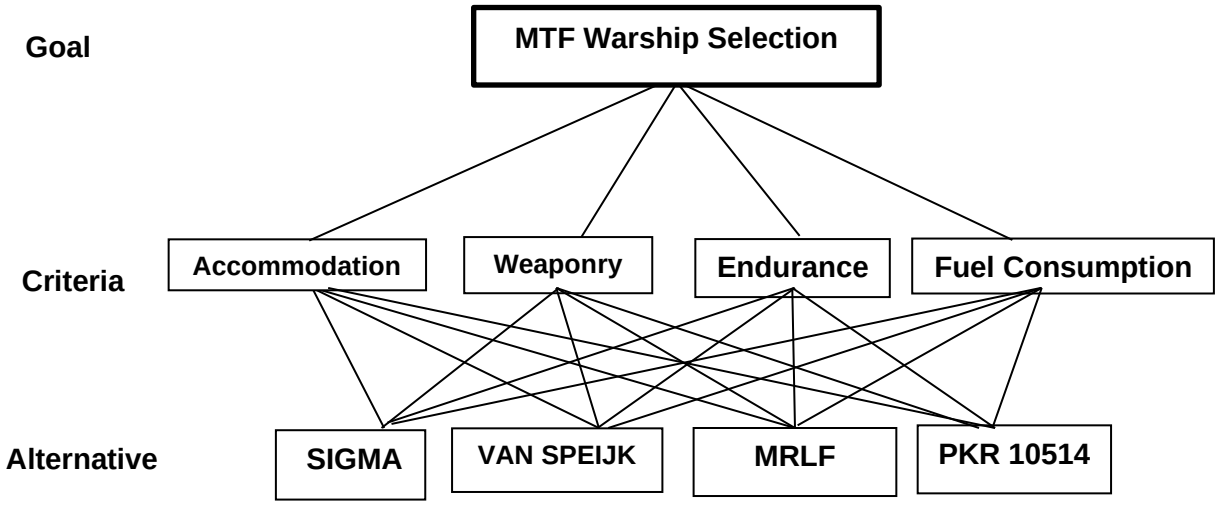

Figure 1. Hierarchy Diagram

Table 1. Description of Criteria

No.	Criteria	Description
1	Accommodation	Includes facilities and equipment the warship includes beds, dining facilities, toilet facilities along with other supporting facilities
2	Weaponry	It covers all types of weaponry available on the warship along with the supporting weapon sensor facilities
3	Endurance	It covers the ability of warship to survive in doing Operations at sea
4	Fuel Consumption	It covers the ability to consume KRI's fuel inside carry out operations at sea

3.2 Determination of Alternative Priorities

Using the AHP method, the weight value is obtained for each of the criteria and sub-criteria in selecting the type of warship. The results of weighting the criteria and sub-criteria. And then, the data processing using Expert Choice software, which can manage the relationship between standards, between sub-criteria or between alternatives, provides the final calculation result in the form of a ranking value of the priority of each option to determine the type of warship.

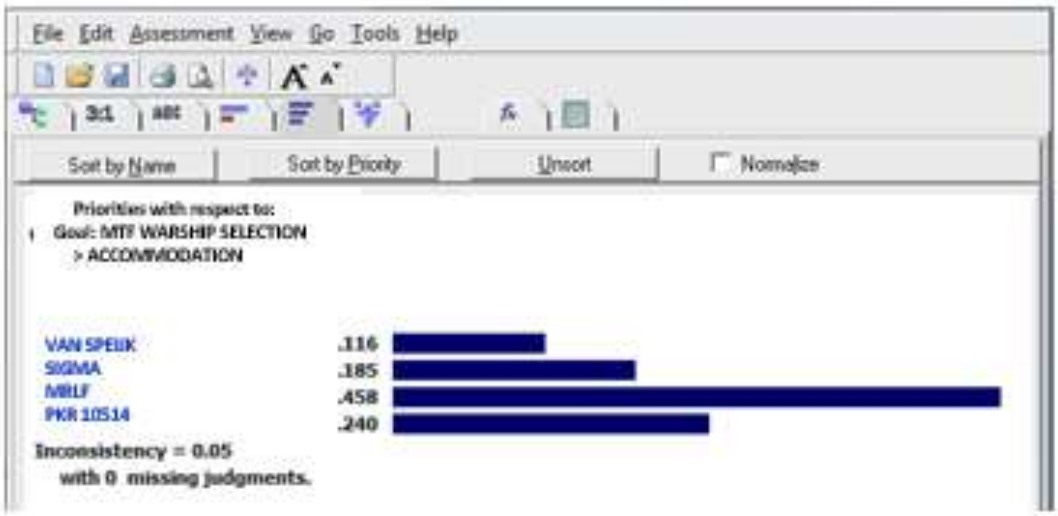

Figure 2. Value of Accommodation

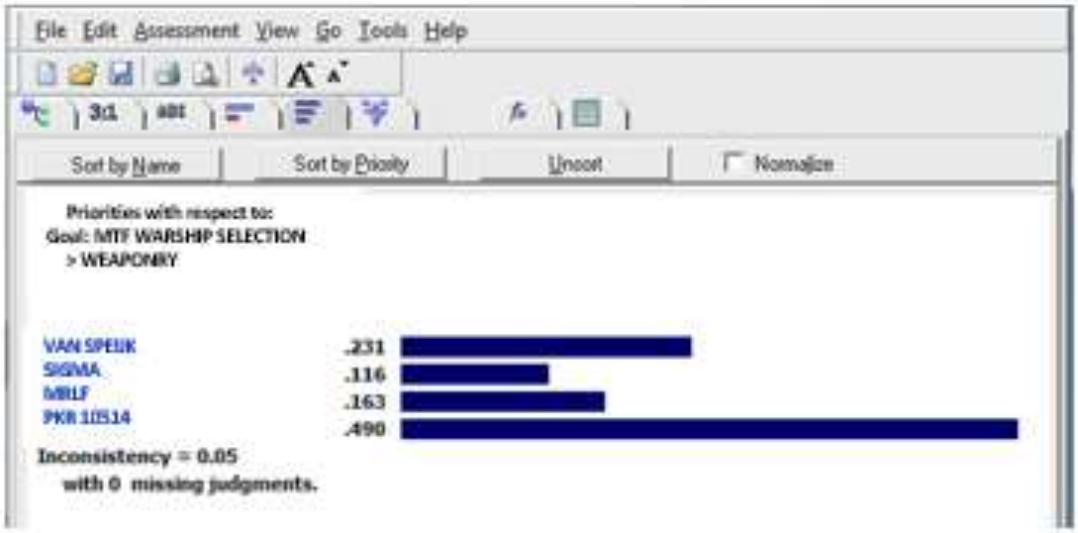

Figure 3. Value of Weaponry

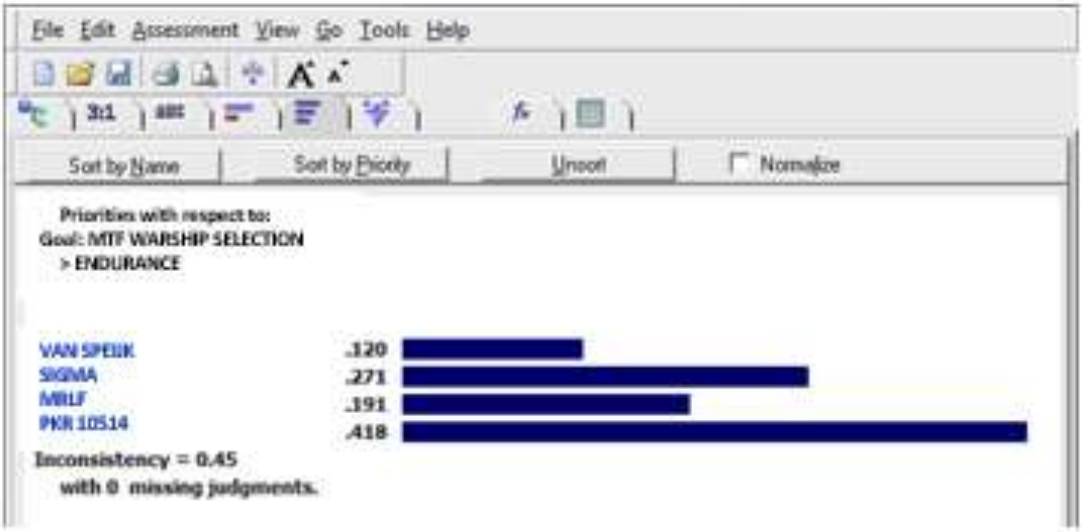

Figure 4. Value of Endurance

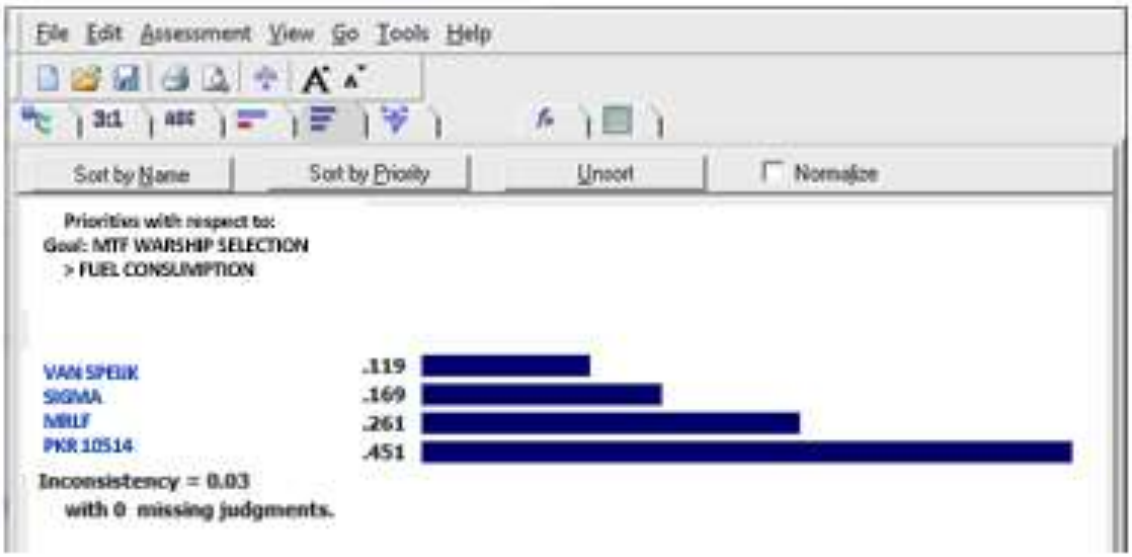

Figure 5. Value of Fuel Consumption Criteria

From the picture above, it can be seen that the alternative priorities are based on the weight value of each criterion. The alternative priority ranking is in accordance with the table below.

Table 2. Priority Ranking for Types of MTF Warships

Rank	Type of Warship	Weight
1	PKR 10514	0.346
2	MRLF	0.256
3	SIGMA	0.249
4	VAN SPEIJK	0.150

Based on the results of the calculation of the expert choice above, it is known that the warship type PKR 10514 was chosen as the top priority to be dispatched to the Maritime Task Force with a score of 0.346.

3.3 Sensitivity Analysis

The priority weight obtained from the results of the assessment data processing is highly dependent on the hierarchical structure developed and on the relative pairwise comparison given from various problem elements. Changes in the hierarchy or ratings can change the weighted priority generated.

Basically, the results of the previous calculations describe an ideal situation. To anticipate changes from previous estimates, a sensitivity analysis is carried out against these estimates. Sensitivity analysis is carried out to determine the extent of the stability of the priorities of the alternatives.

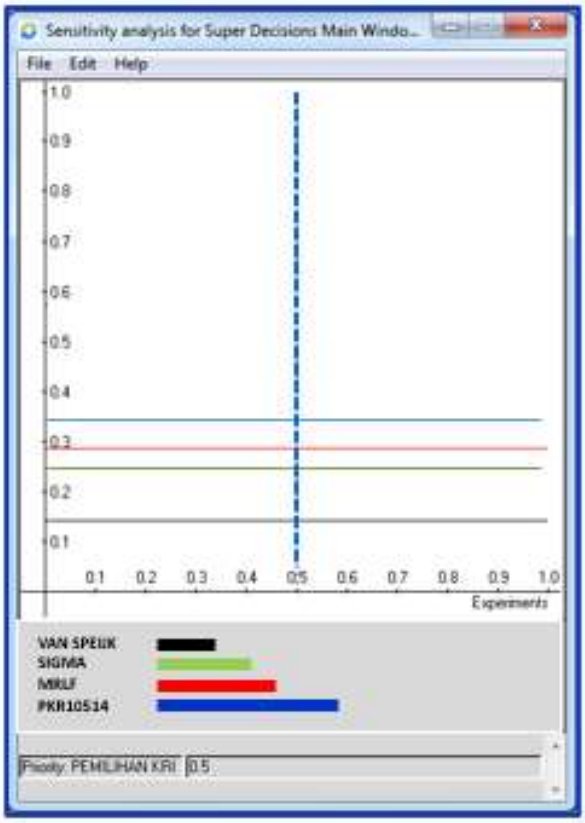

Figure 6. Warships Alternative Sensitivity Diagram

This test can be carried out on all sub-criteria that are used to ensure the level of sensitivity, the results of testing all sub-criteria.

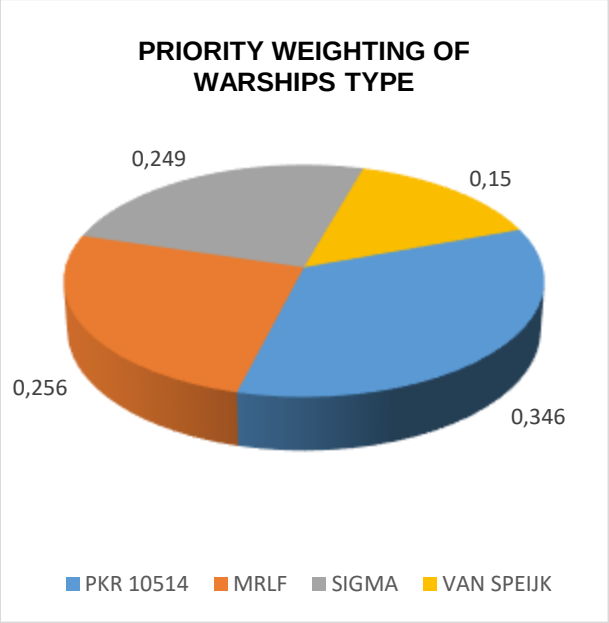

Figure 7. Priority Weighting Diagram

From the diagram above, we can see that PKR 10514 (0,346) has the highest weighting score that was followed by MLRF (0,256), then SIGMA (0,249) and the lowest score was Van Speijk (0,150).

4. CONCLUSION AND SUGGESTION

4.1 Conclusions.

From the discussions above we can take conclusions as follow:

a. Based on the results of calculations using the Analytical Hierarchy Process (AHP) method, it is known that the PKR 10514 has advantages over other types of warships, especially in the criteria for weaponry, endurance and fuel consumption.

b. Based on the results of the calculation of the expert choice on the selection of warships in Maritime Task Force (MTF), the PKR 10514 (0.346) has the highest weighting score that was followed by MLRF (0.256), then SIGMA (0.249) and the lowest score was Van Speijk (0.150).

4.2 Suggestions.

From the conclusions above we can give suggestions as follows:

a. It is crucial for the Indonesian Government, especially the Indonesian Navy, to replace the Maritime Task Force (MTF) warships in order of rejuvenation.

b. The Indonesian Navy must prepare PKR 10514 both in terms of Platform and Sewaco to replace the previous MTF warship so that the replacement process goes well.

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