



doi 10.5281/zenodo.6835253

Vol. 05 Issue 06 June - 2022

Manuscript ID: #0649

READINESS ANALYSIS OF INDONESIAN MILITARY AUTHORIZATIONS IN SUPPORTING THE DEFENSE ECONOMY

Indah Octavia Amarilla & Guntur Eko Saputro

¹*Defense Economic Study Program, Indonesian Defense University, Sentul Jakarta Indonesia
indahocta.amr02@gmail.com*

²*Defense Economic Study Program, Indonesian Defense University, Sentul Jakarta Indonesia
Gunturekosaputroarm95@gmail.com*

*Corresponding author: *Guntur Eko Saputro*

Email: gunturekosaputroarm95@gmail.com

ABSTRACT

State defense and security (hankamneg) have a role and function to defend the existence of the Indonesian nation from any threats and disturbances, both from abroad and within the country. One element of national power is military readiness in terms of technological development, leadership, as well as quantity and quality of troop strength. As time goes on, relying on human resources alone does not always guarantee the creation of a good and efficient defense system without the support of a capable defense system. The reality related to the defense sector currently owned by Indonesia is that it is still not optimal when viewed from the Indonesian defense system, especially regarding the main weapons system (defense equipment) it has. Data from the Stockholm International Peace Research Institute (SIPRI) in 2020 shows that Indonesia is in the position of the 17th largest importing country for defense equipment. The import of the defense industry is still large, so there is a need for system transformation in realizing the independence of the defense industry. Efforts need to be made by the government by increasing the quality and quantity of technology and human resources, as well as open up new industrial fields as suppliers of raw materials for local defense equipment.

KEYWORDS

Defense Economy, preparedness of autsystems, Indonesian military



This work is licensed under Creative Commons Attribution 4.0 License.

I. Introduction.

The world that is experiencing changing times requires every country to be ready to face international threats, both military and non-military in nature. The existence of a country's defense is assessed in terms of economic, social, political, cultural, and national defense which need to be the main focus of the government in making a policy. An applicable national defense strategy needs to be formulated by considering national, regional and global strategic environmental conditions.

State defense and security (hankamneg) has a role and function to defend the existence of the Indonesian nation from any threats and disturbances, both from abroad and within the country. Mirdanies, et al (2013) explained that the estimation of threats and national interests includes strategic interests that are permanent, urgent, and international cooperation in the field of defense and security (hankam). Countries that have advanced military technology, develop several weapons of war ranging from user friendly to dangerous weapons. Hans J. Morgenthau in Mirdanies, et al (2013) argues that one of the elements of national power is military readiness in terms of technological development, leadership, as well as the quantity and quality of troop strength.

Reported by the katadata page (2021) that Indonesia's military strength is ranked as the 16th strongest in the world from 140 countries based on the Global Firepower (2021) data survey. This shows that Indonesia's military strength is close to that of developed countries, so that the Indonesian military is increasingly respected by other countries. Indonesia has the most feared Special Forces in the world, ranking third after the British SAS Troops and the Israeli Mossad based on a Medium survey (tirto, 2019). According to Dzikri (2016), Indonesia has the ability to become a major regional power in Southeast Asia, which is indicated by its economic growth and significant political influence in ASEAN. Furthermore, Dzikri (2016) reveals that there is still a shortage in Indonesia's military power where the military or armed forces are the actual power of a country. Although Indonesia has large human resources (HR) in defense, over time, relying on human resources alone does not always guarantee the creation of a good and efficient defense system without the support of a capable defense system (Sebastian, 2018). Muhammad (2022) shows data related to the low readiness of the Indonesian military in carrying out security which is assessed from the defense equipment aspect, as follows Table 1.1 Data on Readiness of the Indonesian National Armed Forces (TNI):

There are no significant changes from 2009 to 2020. Muhammad (2022) in his data explains that an increase in the defense budget is not the same as an increase in military readiness. The data assesses the readiness of the Indonesian military from the aspect of the main weapon system equipment (defense equipment) owned by the military which in maintaining state security is of course required to have adequate defense equipment to support the task of the military or TNI in maintaining national security and defense. The current condition of the Indonesian defense equipment system is considered still not sufficient to face the growing threat and it is hoped that there will be a renewal of the current defense system. In response to this condition, the Ministry of Defense created the MEF (Minimum Essential Force) program for the fulfillment of defense equipment which is divided into three stages starting in 2010-2014, stage II 2015-2019 and stage III in 2020-2024. Aida (2021) argues regarding the existence of the MEF program which is an absolute prerequisite for certainty and flexibility in preparing long-term plans for the development of defense capabilities. This is done as an effort to increase military readiness to defend the country from military and non-military threats. The government stipulates the defense industry as part of the national industry to partially or wholly produce defense and security tools, as well as maintenance services to fulfill strategic interests in the defense and security sector (Aida, 2021). Mirdanies, et al (2013) assessed that Indonesia has a high dependence on foreign defense technology. This raises the impact of difficulties in preparing long-term defense development plans that have certainty. Muhammad (2022) argues that in defense Indonesia has a system that is not fully integrated, so that Indonesia is considered vulnerable to political pressure from other countries which can result in possible embargoes or restrictions on certain equipment and hinder the development and maintenance of defense facilities.

The development of the national defense industry is vital in the effort to fulfill the operational needs of defense to the fullest. The need for defense products that depend on foreign production will cause problems and affect the capability and readiness of the Indonesian military in carrying out operational tasks in the future (Mirdanies, et al., 2013). Based on data from the Stockholm International Peace Research Institute (SIPRI) in

2020 in Aida (2021), Indonesia is in the position of the 17th largest importing country for defense equipment, which is 1.8 percent of the total international market. This shows that the Indonesian defense industry is still not optimal in meeting the needs for defense equipment production. The import of the defense industry is still large, so there is a need for system transformation in realizing the independence of the defense industry.

The problem of the supply of Indonesian defense equipment which is still inadequate and still dependent on foreign countries is the focus of this research by analyzing it through a strategic decision-making process. The systems thinking approach in measuring the capability of the defense industry is one of the strategies for solving the problems of the Indonesian defense industry. Flood (1999) in Trilestari (2004) explains that systems thinking is the conceptual basis for building an organization in the face of increasing dynamic complexity. Systems thinking is a picture of something as a whole and has a relationship between variables, therefore the results of the systems thinking process can be described in a model. In addition to the systems thinking approach, this research analyzes problems using the SWOT analysis method. SWOT analysis is an alternative strategy that is functional and easier to implement to improve existing strategies (Wardoyo, 2011).

Based on the phenomena that have been described, this study analyzes the structure of the causes of the shortage of Indonesian defense equipment, the structure of solutions to these problems, and recommendations for state policies in mitigating the problem of Indonesia's low military readiness.

II. RESEARCH METHODS

This research will be a qualitative research using the study of literature or literature. Literature research is a data collection technique by conducting a review study of books, literatures, notes, and reports related to the problem being studied (Nazir, 2003). The available library data is data that is ready to be used and utilized directly and also researchers are not required to go directly to the field. The steps in literature research according to Kuhlthau (2002) are as follows:

1. Topic selection
2. Information exploration
3. Determine the research focus
4. Collection of data sources
5. Preparation of data presentation
6. Report preparation

The data collection technique in this study is a documentation technique, which is looking for data and collecting data about things in the form of notes, books, papers, articles, journals and so on (Arikunto, 2010), while the theory used is the implementation theory of Edwards III. which looks at policy implementation from four aspects, namely communication, resource, disposition and bureaucracy.

III. ANALYSIS

A. Defense Management Theory

Defense management uses "a broad set of work methods such as operational, systems and structural analysis, planning and programming, modeling and simulation, alternative creation, performance measurement and process improvement, project management, risk assessment" in addition to others that "applicable to a wide range of aspects. formulation and implementation of defense policies" (Akman, 2020). According to Akman (2020), practitioners, leaders and researchers in defense management should have maximum flexibility to understand and adopt all these methods. It is emphasized that defense management is a dynamic and changing process.

The development of a dynamic environment and strategic context always brings changes to a complex spectrum of threats and has implications for national defense (Kemhan, 2015). The complexity of threats is classified into multi-dimensional patterns and types of threats in the form of military threats, non-military threats and hybrid threats that can be categorized in the form of real and unreal threats (Kemhan, 2015). Thus, future national defense requires the integration of military defense and non-military defense through efforts to build strong and respected national defense forces and capabilities and have high deterrence.

Management in the Indonesian defense industry to date still requires capacity building regarding the technology to be used, the capital system that needs to be reviewed (Susdarmono, 2020). Furthermore,

Susdarmono (2020) is of the opinion that the desire of the Indonesian government to develop and advance the defense industry is considered merely a wish. This is caused by the lack of implementation at the pragmatic level and policies or political will that can facilitate the Indonesian defense industry to advance.

B. Structure of the Cause of the Shortage of Indonesian Defense Equipment Supply Phenomenon

The reality related to the defense sector currently owned by Indonesia is that it is still not optimal when viewed from the Indonesian defense system, especially regarding the main weapons system (defense equipment) it has. The problem of defense equipment is one of the main agendas in Indonesia's defense development. The agenda is related to the priority of improving the TNI (Indonesian National Army) defense equipment system which will determine the strength of Indonesia's defense posture (Yahya, 2008 in Rachmat, 2016). Furthermore, Rachmat (2016) explained that in the current global context, threats to state sovereignty have developed in line with technological developments. Defense technology is always considered to represent the present because it is always driven by deterrence capabilities to be able to answer demands and respond to ever-changing threats. Therefore, defense products have always been state of the art. A country that has an established defense industry is considered to have a strategic advantage in the global order. This condition makes Indonesia need a defense support system and defense equipment that can deal with various potential threats that will arise.

The defense industry is one of the vital components of defense capabilities. The strength of the defense industry has two main effects, namely a direct effect on the development of defense capabilities, and an effect on national economic and technological development (Mirdanies, et al., 2013). In the field of defense capability development, a strong defense industry can supply Indonesia's defense equipment needs and defense facilities in a sustainable manner. The availability of a sustainable supply of defense equipment is an absolute prerequisite for the flexibility and certainty to formulate a long-term defense capability development plan, without worrying about political and economic factors such as embargoes or restrictions (Mirdanies, et al., 2013). Indonesia has so far been dependent on foreign defense technology, making it difficult to formulate a long-term defense development plan that has certainty. Based on data from the Stockholm International Peace Research Institute (SIPRI) in 2020 in Aida (2021), Indonesia is in the position of the 17th largest importing country for defense equipment, which is 1.8 percent of the total international market. This shows that the Indonesian defense industry is still not optimal in meeting the needs for defense equipment production. The import of the defense industry is still large, so there is a need for system transformation in realizing the independence of the defense industry.

According to Mirdanies, et al (2013), the independence of the development and procurement of defense facilities is absolutely impossible without external assistance. The existence of an independent defense industry aims for Indonesia to be able to produce the procurement of national defense facilities and not be completely dependent on foreign countries. This is done in order to reduce the negative impact of international political and economic conditions, thus affecting the supply of defense equipment and its maintenance services. Sebastian (2018) explains that in building a defense force, you must adjust to the development of wars that will occur in the future. In the future, this form of war involves the mastery of modern warfare technology (modern warfare) owned by a country's military. The problem of procuring the supply of Indonesian defense equipment can be mapped in the Design System Thinking to facilitate a more holistic analysis of the problem. Haraldsson (2004) explains that system analysis is used to solve a problem in understanding the elements of the problem that are the main cause of the incident.

System analysis has various kinds of diagram models, one of which is Causal Loop Diagrams / CLD (Causal Circle Diagrams) which serves to map the problem structure and possible solutions according to these problems (Haraldsson, 2004). CLD is used to understand a system so that those who need it can develop strategies to overcome existing problems, as well as to find out the relationship between one problem and another. CLD consists of variables connected by arrows indicating a causal effect between these variables, which are given a positive sign (+) if the independent variable and dependent variable affect each other as a result and change according to the direction of change in the variable that affects it or is negative (-) to indicate how the dependent variable changes when the independent variable has the opposite effect, meaning that when

the influencing variable increases, the affected variable decreases (Senge, 2006). Senge (2006) divides the possible Causal Loop Diagrams that occur into 10 systems archetypes. One of them is Limit to Success which explains that the efforts given initially will result in positive performance but, over time, these efforts encounter obstacles that will slow down overall performance and make them helpless no matter how much effort they put in. From the things above, the following is a mapping of problems or obstacles that occur in the Indonesian defense industry using the Limit to Success approach, namely:

By increasing the capability of the Indonesian defense industry to produce defense equipment, it will have an impact on meeting the supply of defense equipment needed by the Indonesian military. The ability of Indonesia's defense industry to be independent can be triggered by increasing research and development of defense technology so that it can compete with other countries' defense technology. However, activities to increase research and development were slowed due to the presence of imported raw materials from abroad. The import of raw materials is due to the absence of a company capable of producing the raw materials needed by the internal defense industry, one of which is brass cups for the manufacture of PT. PindadPersero (Siahaan, et al., 2019).

C. Problem Solution Structure

Indonesia has a high dependence on foreign countries in the field of defense technology. As a result, it is difficult to formulate a long-term defense development plan. To address this situation, it is necessary to develop and provide national defense facilities. The defense industry involves various sectors to help realize the production of domestic defense equipment. The sectors involved include research and development agencies, universities, industry, and the Ministry of Defense/TNI which have been accommodated by clear national policies.

The solution presented to solve strategic problems can use one of the management analysis tools, namely SWOT analysis. SWOT analysis is an alternative strategy that is functional and easier to implement to improve existing strategies (Wardoyo, 2011). The SWOT analysis process is to determine strategic policies and steps to be implemented by analyzing each factor, both internal and external. The first step is to analyze various strategic environmental factors of objects and subjects to determine the variables that influence the Strength, Weakness, Opportunity and Threat factors. The following is a table of SWOT variables according to the problems in the Indonesian defense industry:

SWOT analysis

INTERNAL FACTORS	
Strenght	Weakness
<ol style="list-style-type: none"> 1. There is an order for defense equipment from the Ministry of Defense 2. Support of the Defense Industry Independence Act and KKIP 3. Management of Defense Industry MSMEs 4. Readiness to master technology and the availability of adequate human resources 	<ol style="list-style-type: none"> 1. The defense industry still uses raw materials from abroad 2. Improper policy implementation 3. Lack of experts in the defense industry in research and development 4. Lack of defense equipment raw material manufacturing sector (raw material suppliers)
FAKTOR EKSTERNAL	
Opportunity	Threat
<ol style="list-style-type: none"> 1. The need for a large defense system to fulfill the Minimum Essential Force (MEF) 2. The government's plan to increase the defense budget 3. The existence of research institutions that support the development of defense technology 	<ol style="list-style-type: none"> 1. Product quality and price are still less competitive with foreign countries 2. The existence of buying and selling products from abroad as defense diplomacy 3. Defense and economic embargo 4. Global technology development

4. The large quantity of Human Resources owned by Indonesia	
---	--

Based on the table analysis of the SWOT variables entered into the Strengths, Weaknesses, Opportunities, and Threats sections, the influential variables are combined into alternative strategies that will be selected from the results of quantitative calculations based on assessment or weighting . The strategy is divided into four parts, namely the Strength - Opportunity (S-O) strategy; Weakness – Opportunity (W-O); Strength – Threat (S-T); Weakness – Threat (W-T). The following are alternative SWOT strategies:

Strategy SWOT

S-O	W-O
<ol style="list-style-type: none"> 1. Optimizing the need for national defense equipment 2. Realizing government support to realize domestic independence 3. Improving the quality and quantity of technology and Human Resources 4. The opening of new industrial fields as suppliers of raw materials for defense equipment 	<ol style="list-style-type: none"> 1. Optimizing the need for national defense equipment 2. Realizing government support to realize domestic independence 3. Improving the quality and quantity of technology and Human Resources 4. The opening of new industrial fields as suppliers of raw materials for defense equipment
S-T	W-T
<ol style="list-style-type: none"> 1. Optimizing the need for national defense equipment 2. Realizing government support to realize domestic independence 3. Improving the quality and quantity of technology and Human Resources 4. The opening of new industrial fields as suppliers of raw materials for defense equipment 	<ol style="list-style-type: none"> 1. Defense budget support 2. International cooperation in the fulfillment of spare parts that are lacking 3. Providing international equal welfare 4. Keeping up with global technology development

Based on the analysis data on the SWOT matrix, it shows that the problem of procuring Indonesian military defense equipment is in quadrant I, which means the defense industry has the opportunity to take advantage of existing opportunities. The strategy set in this condition is to support an aggressive growth policy (growth oriented strategy), expand, and achieve maximum progress. The S-O strategy in table 1.3 is a strategy that is taken if the conditions show in quadrant.

D. CONCLUSION

Indonesia has so far been dependent on foreign defense technology, making it difficult to formulate a long-term defense development plan that has certainty. Efforts to increase the capability of the Indonesian defense industry to produce defense equipment will have an impact on meeting the supply of defense equipment needed by the Indonesian military. The ability of Indonesia's defense industry to be independent can be triggered by increasing research and development of defense technology so that it can compete with other countries' defense technology. However, activities to increase research and development were slowed because there were still raw materials imported from abroad. The government can carry out alternative strategies, namely by optimizing the need for national defense equipment, realizing the government's commitment to realizing the independence of the national defense industry, increasing the quality and quantity of technology and human resources, and opening new industrial fields as suppliers of raw materials for defense equipment.

E. Recommendations

The strategic industry in the defense sector is very important in the development of a country's armed forces. The need for capabilities that do not depend on other countries is an absolute requirement. Therefore, there is a need for a common perception regarding the role of the domestic strategic industry to support the need for military defense equipment. Mirdanies, et al (2013) argue that there are still parties who compare the prices of domestic and foreign products where foreign products have different qualities from domestic products. If we look further, the delay in the progress of domestic industry is caused by the need for government subsidies and high selling prices due to limited production. In addition, there is still a lack of funds for research and development of defense technology.

The government needs to realize its commitments that have been stated in the Law of the Republic of Indonesia number 16 of 2012 concerning the Defense Industry, in which there is an obligation to use the Main Equipment of the Weapon System (Alutsista) domestically produced. In the defense industry law, efforts to transfer technology are encouraged, or funding in the form of offsets and trade offsets for defense and security equipment products imported from abroad because the domestic defense industry has not been able to make them. The realization of the independence of the defense industry is also regulated in Government Regulation of the Republic of Indonesia number 74 of 2014 concerning the Trade-off Mechanism in the Procurement of Defense and Security Equipment from Abroad. In addition, the President has regulated the duties of the Defense Industry Policy Committee (KKIP) based on Presidential Regulation Number 42 of 2010 concerning the Defense Industry Policy Committee which can be concluded that KKIP is tasked with making policies and coordinating the implementation and control of the defense industry, both nationally and internationally as an effort developing Indonesia's defense industry.

The development of the defense industry has a very large role in subsequent developments, so its implementation must be maximally integrated. Efforts to develop the defense industry will not only benefit the defense, but can also create productive employment opportunities for Indonesian human resources, which is increasing due to the demographic bonus.

REFERENCES

- Achdani, D. (2014). Optimalisasi Peran Industri Pertahanan dalam Negeri Guna Kemandirian Pemenuhan Kebutuhan Alutsista TNI Dalam Rangka Mempertahankan Keutuhan NKRI. *Jakarta: Lembaga Ketahanan Nasional*.
- Aida, A. N. (2021). Potret Industri Pertahanan Indonesia. *Jakarta: Dewan Perwakilan Rakyat Republik Indonesia*.
- Akman, M. K. (2020). Defence management and PESTLE analysis. *Ante Portas–Security Studies*, 1(14), 93-102.
- Dzikri, I. (2016). Negara dan Kapasitas Adopsi Inovasi: Studi Kasus Transformasi Pertahanan Indonesia Periode 1998-2014. *Global: Jurnal Politik Internasional*, 18(2), 131-151.
- Duha, Junindra, and Guntur Eko Saputro. "Blue Economy Indonesia to Increase National Income through the Indian Ocean Rim Association (IORA) in the Order to Empower the World Maritime Axis and Strengthen State Defense." *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan)* 7.2 (2022): 514-527.
- Haraldsson, H. V. (2004). *Introduction to system thinking and causal loop diagrams*. Lund, Sweden: Department of chemical engineering, Lund University.
- Katadata. (2021). Global Firepower Peringkat 16 Dunia Kekuatan Militer Indonesia Semakin Disegani. Diakses pada 27 Februari 2022, <https://databoks.katadata.co.id/datapublish/2021/09/02/global-firepower-peringkat-16-dunia-kekuatan-militer-indonesia-semakin-disegani>
- Kemhan. (2015). *Buku Putih Pertahanan: 2015*. Kementerian Pertahanan: Jakarta.
- Marha, J., Saputro, G., E., dan Almubaroq, H., Z. (2022). Pembangunan Ekonomi Rakyat Berbasis Kewirausahaan Dalam Upaya Meningkatkan Pertahanan Negara Indonesia. *Jurnal Inovasi Penelitian*, Vol.3 No. 2.
- Mirdanies, M., Saputra, H. M., Subekti, R. A., Susanti, V., Nugraha, A. S., Rijanto, E., & Hartanto, A. (2013). *Kajian Kebijakan Alutsista Pertahanan dan Keamanan Republik Indonesia*. Lembaga Ilmu Pengetahuan Indonesia.
- Muhammad, A. (2022). *Disain Kesisteman untuk Pertahanan dan Teknologi Terintegrasi dalam mendukung ibu kota negara Nusantara sebagai Center of Gravity*. Presentasi Kuliah Kerja Dalam Negeri Industri Pertahanan: Universitas Pertahanan.
- Saputro, Guntur Eko, and L. Prakoso. "Implementation of Economic Policies Facing Covid 19 in Supporting Nonmilitary Defense." *International Journal of Social Science And Human Research* 4.4 (2021): 634-642.
- Saputro, Guntur Eko, Herlina Tarigan, and Deni Dadang Ahmad Rajab. "the Role of Defense Economic in Economic Growth." *Jurnal Pertahanan: Media Informatif Kajian & Strategi Pertahanan yang Mengedepankan Identity, Nasionalism & Integrity* 7.2 (2021): 330-341.
- Saputro, Guntur Eko. "Analisis Pengaruh Stabilitas Keamanan dan Pertumbuhan Industri Strategis Terhadap Makroekonomi." *Jurnal Ekonomi* 21.3 (2019): 237-253.
- Saputro, Guntur Eko, Afif Maulana Rivai, and Meirinaldi Meirinaldi. "PENGARUH ANGGARAN PERTAHANAN, IMPOR ALUTSISTA, EKSPOR ALUTSISTA, DAN INFLASI TERHADAP PERTUMBUHAN EKONOMI DI INDONESIA TAHUN 1980-2019." *Jurnal Ekonomi* 23.2 (2021): 103-115.
- Saputro, Guntur Eko, Djoko Andreas, and Ivan Yulivan. "Implementation of Economic Policy Facing the China American Trade War in the Framework of Nirmilitary Defense." *International Journal of Social Science And Human Research* (2021).
- Saputro, Guntur Eko, and Suwito Suwito. "ECONOMIC RESILIENCE IN ASYMMETRIC WARFARE." *Jurnal Pertahanan: Media Informatif Kajian & Strategi Pertahanan yang Mengedepankan Identity, Nasionalism & Integrity* 8.1 (2022): 109-117.
- Saputro, Guntur Eko. "KERJASAMA INDUSTRI PERTAHANAN INDONESIA DAN KOREA SELATAN DALAM PERSPEKTIF EKONOMI PERTAHANAN." *JURNAL EDUCATION AND DEVELOPMENT* 10.2 (2022): 227-234.

- Saputro, Guntur Eko, Riki Firmansyah, and Meirinaldi Meirinaldi. "The Influence of Budget Planning, Performance Measurement System and Budget Evaluation on the Performance of the Directorate General of Defense Planning." (2022).
- Sebastian, E. (2018). Peningkatan Peranan SDM pertahanan nasional dalam menghadapi perang generasi keempat. *Jurnal Pertahanan & Bela Negara*, 5(1), 109-128.
- Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization*. Currency.
- Siahaan, T., Sovian, A., & Egkrateia, P. (2019). Analisis Kesiapan PT. Pinda dalam Memproduksi Brass Cup Sebagai Bahan Baku Munisi Guna Mendukung Pertahanan Negara. *Jurnal Pertahanan dan Bela Negara*.
- Susdarmono, E, T. (2020). Pokok - Pokok Pikiran Mengenai Pembangunan Kemandirian Industri Pertahanan Indonesia Dalam Undang-Undang No 6 Tahun 2012 Tentang Industri Pertahanan. *Jurnal Ius Constituendum*. 5(1), P111-139.
- Tirto. (2019). Kekuatan Militer Indonesia 2019 Dari Senjata Hingga Pasukan Khusus. Diakses pada 27 Februari 2022, <https://tirto.id/kekuatan-militer-indonesia-2019-dari-senjata-hingga-pasukan-khusus-egpl>
- Trilestari, E. W. (2004). Systems Thinking dan System Dynamics Sebagai Suatu Pendekatan dalam Pengukuran Kinerja Pelayanan. *Jurnal Ilmu Administrasi: Media Pengembangan Ilmu dan Praktek Administrasi*, 1(3), 71-81.
- Wardoyo, P. (2011). Enam Alat Ana