

Strategic determinants of military expenditure in Indonesia: Insights from AHP

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Abstract: This study investigates the key determinants of defense spending in Indonesia using the Analytical Hierarchy Process (AHP) to prioritize factors influencing budget allocations. Indonesia's unique strategic position, resource wealth, and internal security challenges necessitate a comprehensive approach to defense budgeting. The AHP methodology was employed to assess the relative importance of four main criteria: National Resources, Internal Geopolitics, Finance, and Global Geopolitics. Data were gathered from a combination of literature reviews and insights from key stakeholders, including government agencies and academic experts. The results indicate that National Resources, particularly natural wealth such as oil, are the most critical factors driving military expenditure, highlighting Indonesia's dependence on resource-based revenues. Internal Geopolitics, focusing on political stability and internal conflicts, also significantly influence defense spending, emphasizing the need for a stable domestic environment. The findings further reveal varying perspectives among stakeholders, particularly in financial and geopolitical considerations, underscoring the challenges in aligning strategic priorities. This research offers a structured framework for optimizing defense spending, providing valuable insights for policymakers in Indonesia and other nations with similar budgetary constraints. The study highlights the importance of a cohesive and informed defense budgeting strategy to enhance national security and economic sustainability.

Keywords: defense spending; analytical hierarchy process (AHP); military expenditure; budget allocation; Indonesia

1. Introduction

In recent years, global conditions have significantly shifted perspectives on defense spending, leading countries worldwide to reevaluate their military budgets in response to evolving security threats. Russia's invasion of Ukraine, for example, has intensified conflicts, which have extended into the Middle East, affecting nations such as Israel, Palestine, Iran, Iraq, Syria, Saudi Arabia, and Jordan. This situation has driven national security. Russia, for instance, increase military expenditures to bolster national security. Russia, for instance, increased its military expenditure by 2.9% in 2021, reaching \$65.9 billion in preparation for heightened military engagement in Ukraine. Similarly, Saudi Arabia and Israel also raised their defense budgets, with Saudi Arabia spending \$75.01 billion and Israel \$23.4 billion in 2022 (World Bank, 2024). As a strategically located archipelagic nation with abundant natural resources, Indonesia faces unique challenges in balancing its defense needs with economic and geopolitical pressures.

Several factors, including risk levels, military capabilities, economic policies, and foreign exchange rates, critically influence a country's defense spending (Syafril and Saputro, 2023). These factors interact in complex ways, making defense budgeting a challenging task for policymakers. Countries facing high external risks, for instance, may prioritize military strength and technological advancements, while those dealing with economic constraints may focus on balancing defense spending with fiscal sustainability. Policy-makers must also consider military strength, purchasing power parity, external debt, and the quality of defense resources when allocating defense budgets (Dudzevičiūtė et al., 2016; Syafril and Saputro, 2023). Additionally, international conflicts and political dynamics play crucial roles in shaping government decisions regarding defense spending (Seitz et al., 2014).

Furthermore, the international political landscape, including alliances and geopolitical tensions, can necessitate adjustments in defense allocations to maintain strategic stability. Effective defense spending requires a holistic approach that considers both the immediate and long-term economic impacts. In Indonesia, the Minimum Essential Force (MEF) concept shapes the country's defense policy by setting the standard for the minimum level of defense capability required to uphold national sovereignty and territorial integrity. The MEF framework guides Indonesia's military expenditure by ensuring that resources are allocated to achieve essential defense capabilities. The Indonesian Ministry of Defense has set ambitious targets, aiming to reach a 70% minimum capability of the total defense requirements by 2024 (Indonesia Ministry of Defense, 2016)

Indonesia's military expenditure (milex) commands significant global attention due to its strategic military ranking and pivotal geopolitical position. Ranked as the 13th largest military in the world, Indonesia actively maintains regional stability in Southeast Asia, a region strategically situated at the crossroads of major global trade routes. This ranking highlights Indonesia's military capabilities, which not only defend the nation but also strengthen broader regional security frameworks, such as the ASEAN Defense Ministers' Meeting (ADMM) and its various initiatives (Global Firepower, 2024).

Indonesia's geopolitical significance increases further because it holds the position of the largest archipelagic state in the world, with over 17,000 islands stretching across a vast maritime area. This geography places Indonesia in a critical role, as it actively safeguards key maritime routes, including the Strait of Malacca, one of the world's busiest shipping lanes (Tarapore, 2020). Ensuring the security of these routes is crucial for inter-national trade, particularly for transporting energy resources and goods between the Middle East, East Asia, and beyond (Till, 2013). Indonesia's efforts in early 2000 to create ASEAN Political Security Community shows Indonesia Indonesia's role as a mediator in regional conflicts and its active participation in United Nations peacekeeping missions. This effort further elevates the importance of Indonesia's military expenditure on the global stage maintaining a robust military, Indonesia not only secures its own borders but also contributes to the stability and security of the ASEAN, which is increasingly becoming a focal point of global geopolitical interest (Acharya, 2014).

A review of Indonesia's historical military expenditure patterns shows that key decision was heavily influenced by geopolitical tensions during the cold war and the

subsequent economic crisis of the 1990s. Historical documents and archives reveal that those periods of heightened military spending coincided with natural security threats and shift in the global political landscape. This demonstrates how historical events have shaped Indonesia's defense budgeting decisions, reinforcing the need for consistent and strategic military investment to respond to both regional and global pressures.

The allocation of Indonesia's defense budget has historically been influenced by previous years' spending. However, this approach led to discrepancies and differing viewpoints among key stakeholders involved in the budgetary process. For example, Indonesia's defense budget was approximately \$8.8 billion in 2021 and \$8.9 billion in 2022, which was a 4.30% decrease from 2020 when Indonesia's defense budget was \$9.3 billion (World Bank, 2022). This decrease indicates that the government often fails to address all the strategic defense needs. In Indonesia, the National Development Planning Agency is responsible for planning, the Ministry of Defense proposes a budget, and the Ministry of Finance, allocates funds. This lack of synchronization often results in challenges in meeting the strategic defense needs of the country. For instance, in 2021, National Development Planning Agency proposed a defense budget increase to counter rising regional threats, but budgetary constraints led Ministry of Finance to approve only a portion of the re-quested funds, highlighting the ongoing challenge of aligning strategic priorities with fiscal realities (Jakarta Post, 2021).

The existing literature has largely neglected the specific factors influencing Indonesia's defense spending, creating a gap in understanding that poses challenges for policy-makers. Given budgetary constraints, it is crucial to prioritize defense spending effectively. Despite extensive research on defense budgeting in major powers, there is a significant gap in understanding how emerging economies like Indonesia prioritize their military expenditures. Indonesia's defense spending decisions are shaped by a complex interplay of factors, including its natural resource dependency, internal political stability, and strategic regional considerations. This study aims to address this gap by exploring the key determinants of Indonesia's defense spending using a structured and quantitative approach. To systematically evaluate the factors influencing Indonesia's defense spending, this study employs the Analytical Hierarchy Process (AHP), a multi-criteria decision-making tool that enables the prioritization of complex and often competing criteria. AHP provides a structured framework for assessing the relative importance of various factors, allowing for informed and cohesive budgetary decisions. This research aims to identify and prioritize the key determinants of defense spending in Indonesia, focusing on four primary criteria: National Resources, Internal Geopolitics, Finance, and Global Geopolitics. By providing a structured approach to defense budgeting, this study seeks to enhance the effectiveness and sustainability of Indonesia's military expenditure policies, offering valuable insights for policymakers and contributing to the broader field of defense economics. By identifying key factors that should be prioritized, this research aims to enhance the effectiveness and sustainability of Indonesia's defense policies. The findings will not only optimize Indonesia's defense budget but also contribute valuable insights to global defense economics, providing a framework for other nations facing similar budgetary challenges.

2. Materials and methods

In this study, the selection and weighting of criteria and sub-criteria were conducted through a combination of a comprehensive literature review and Focus Group Discussions (FGD) with experts in defense and economics. The literature review provided the theoretical foundation by identifying relevant criteria from previous research. Following this, the FGD involved stakeholders from various institutions, including the House of Representatives of Indonesia, the Ministry of Defense, the Ministry of Finance, and academics from the Indonesian Defense University. These participants were selected based on their deep knowledge and involvement in defense budgeting. Their expert opinions, based on direct experience, provide valuable data that is representative of real-world applications of military expenditure, thus mitigating the need for additional case studies.

The experts discussed and refined the criteria to ensure they were relevant to Indonesia's specific context and strategic needs. Through this iterative process, the criteria and sub-criteria were prioritized and weighted using the AHP methodology, which allowed for a systematic and quantitative comparison of their importance in defense spending decisions. This study begins with a comprehensive literature review to identify the main criteria and sub-criteria relevant to defense budgeting. This step involves analyzing existing studies, reports, and documents to gather information on the various factors that influence defense spending. The literature review helps establish a theoretical foundation and ensures that all relevant factors are considered. The criteria and sub-criteria identified include financial aspects such as debt, exchange rates, GDP, inflation, and trade openness, geopolitical factors such as external conflicts, regional military expenditures, and polution. **Table 1** presents supporting literature on the determinant factors of military expenditure.

Criteria/sub-criteria	Supporting Literature	
Debt	(Azam and Feng, 2017)	
Exchange rate	(Khan and Imran, 2023)	
FDI	(Alamirew and Phd, n.d.; Pacific et al., 2017)	
GDP	(Deng and Sun, 2017; Do, 2021; Gibson, 2020; Graham and Mueller, 201 Hou, 2018; Kollias et al., 2018; Markowski et al., 2017; Pamp and Thurne 2017; Saba and Ngepah, 2019; Töngür and Elveren, 2015; Vallejo-Roserc al., 2021)	
Inflation	(Aiyedogbon et al., 2012; Khan and Imran, 2023)	
Non milex	(Saba and Ngepah, 2021; Skogstad, 2016; Solarin, 2018)	
Price index	(Khan and Imran, 2023; Solarin and Sahu, 2015)	
Trade openness	(Böhmelt and Bove, 2014; Bove and Nisticò, 2014)	
Allies expenditure	(Bove and Nisticò, 2014; Murdoch and Sandler, 1984; Odehnal et al., 2021; Pamp et al., 2018)	
Enemy expenditure	(Nordhaus et al., 2012; Skogstad, 2016)	
External conflict	(Christie, 2019; Josselin and Malizard, 2022; Kuokštytė et al., 2021; Neubauer and Odehnal, 2018)	

Table 1. Military expenditure criteria and sub-criteria.

Гable	e 1.	(Continued).
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Criteria/sub-criteria	Supporting Literature	
Global war	(Armey and McNab, 2017; Bove and Nisticò, 2014; Kauder and Potrafke, 2016; Skogstad, 2016; Yesilyurt and Elhorst, 2017)	
Neighbor expenditure	(Christie, 2019; N. Hou and Chi, 2022; Yalta and Yalta, 2022; Yesilyurt and Elhorst, 2017)	
Region average Milex	(Chairil et al., 2013; Hirnissa and Baharom, n.d.; Topcu and Aras, 2017)	
Supreme country Milex	(Christie, 2019; D. Hou, 2018)	
No. of internal conflicts	(Arezki and Brueckner, 2021; Gibson, 2020; Pamp and Thurner, 2017)	
Corruption controls	(Arif et al., 2019; Do, 2021)	
Democracy index	(Bove and Brauner, 2016; Gibson, 2020; Kollias et al., 2018)	
Political colors (democracy/ideology)	(Bove and Brauner, 2016; Bove and Nisticò, 2014; Yesilyurt and Elhorst,) 2017)	
Political stability	(Fonfría and Marín, 2012; Saputro et al., 2020)	
Terrorism	(Hewitt, 1991)	
Web security	(Dumas, 2014)	
Natural resources	(Arezki and Brueckner, 2021)	
Oil income	(Akpolat and Bakirtas, 2020; Erdoğan et al., 2020; Wang and Su, 2021; Yalta and Yalta, 2022)	
Population	(George et al., 2019; Hou, 2018; Josselin and Malizard, 2022; Pamp and Thurner, 2017; Skogstad, 2016; Yalta and Tüzün, 2021; Yesilyurt and Elhorst, 2017)	

Based on the literature review, this study identifies the key criteria and subcriteria that affect defense spending. These criteria typically include the economic conditions, strategic factors, and internal security threats. Additionally, specific subcriteria identified from the perspectives of different stakeholders such as the Dewan Perwakilan Rakyat Republik Indonesia / Indonesian People's Representative Council (DPR RI), the Ministry of Defense, the Ministry of Finance, the National Development Planning Agency, and academics from the Indonesian Defense University. To validate and refine the identified criteria and sub-criteria, a Focus Group Discussion (FGD) was conducted with defense and economics experts. Experts from relevant fields and institutions contributed to ensure a broad and informed perspective.

During the FGD, the experts clustered the identified criteria and sub-criteria, ensuring that they accurately reflected the specific context and strategic needs of Indonesia. The experts discussed the relevance and applicability of each criterion, providing valuable in-sights that enhance the robustness of the analysis.

The Analytical Hierarchy Process (AHP) framework utilized in this study is systematically represent through a hierarchy tree that delineates the structured decision-making process employed to prioritize the determinants of defense spending. The hierarchy is organizing into multiple levels, beginning with the overarching objective of optimizing the defense budget allocation. This primary objective is support by key criteria, such as Finance, Global Geopolitics, Internal Conditions, and National Resources, each of which is further subdivide into specific sub-criteria that provide a detailed basis for evaluation. The AHP hierarchy tree is shown in **Figure 1**.

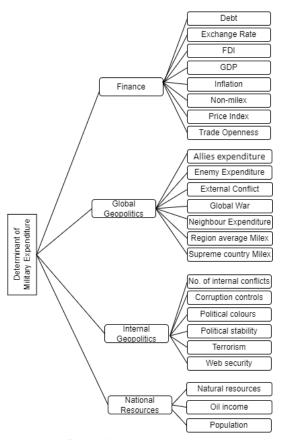


Figure 1. Hierarchical tree.

Through pairwise comparisons, respondents assess the relative importance of each criterion, leading to the generation of weighted scores that reflect the priority of each factor in the decision-making hierarchy. To ensure the reliability of the AHP results, it is crucial to assess the level of agreement among the respondents. This is done by calculating the coefficient of agreement (W), a metric that determines the extent to which the respondents' judgments align. The steps for calculating are as follows:

• Mean Score (U):

$$U = (T1 + T2 + ... + Tp)/p$$
(1)

• Sum of Squared Deviations (*S*):

$$S = (T1 - U)^{2} + (T2 - U)^{2} + \dots + (Tp - U)^{2}$$
⁽²⁾

• Maximum Possible Sum of Squared Deviations (MaxS):

MaxS =
$$(n - U)^2 + (2n - U)^2 + ... + (pn - U)^2$$
 (3)

• Coefficient of Agreement (*W*):

$$W = S/MaxS \tag{4}$$

The value of W ranged from 0 to 1, with values closer to 1 indicating a higher level of consensus among the respondents. This metric is vital for ensuring that the AHP results are not only accurate, but also representative of a broad consensus among key stakeholders. By incorporating this calculation, this study ensures that the final prioritization of defense spending determinants base on a reliable and unified perspective.

3. Results and discussion

3.1. Criteria and sub-criteria analysis

The data collected to perform the AHP methodology involved seven respondents who were House of Representatives of Indonesia, the Ministry of Defense, the Ministry of Finance, the National Development Planning Agency, and academics from the Indonesian Defense University who have witnessed the transformation of the Indonesian budget defense over the past decade. The priorities obtained at each level of the decision hierarchy in AHP assign weights to criteria that are based on pairwise comparison. The decision hierarchy includes 4 criteria and 24 sub-criteria. The comparison then resulted in a summary score of the indicators (**Tables 2–4**). The obtained score was then multiplied and ranked scores (Myeong and Lee, 2018). The consistency index (CI) and consistency ratio (CR) values were less than 0.10 and λ max was.

Criteria	Criteria weight	Rank	Sub-criteria	Sub-criteria weight	Rank
	0.2301	3	Debt	0.1153	5
			Exchange rate	0.1383	3
Finance			FDI	0.1069	7
			GDP	0.1775	1
			Inflation	0.1317	4
			Non-milex	0.1399	2
			Price index	0.1125	6
			Trade openness	0.0778	8
	0.1447	4	Allies expenditure	0.0878	7
			Enemy expenditure	0.1166	6
			External conflict	0.1637	4
Global geopolitics			Global war	0.1721	1
geoponites			Neighbour expenditure	0.1666	3
			Region average Milex	0.1717	2
			Supreme country Milex	0.1216	5
Internal geopolitics	0.2865	2	No. of internal conflicts	0.1568	2
			Corruption controls	0.0914	6
			Democracy index	0.0791	7
			Political colours (democracy/ideology)	0.1564	3
			Political stability	0.2604	1
			Terrorism	0.1300	4
			Web security	0.1260	5

Table 2. Weights of the indicators.

Criteria	Criteria weight	Rank	Sub-criteria	Sub-criteria weight	Rank
National resources	0.3387	1	Natural resources	0.3981	1
			Oil income	0.2709	3
			Population	0.3309	2

Table 3 Rater agreement base on main criteria

 Table 2. (Continued).

Table 5. Kater agreement base on main citteria.						
Respondent	Finance	Global Geopolitics	Internal Condition	National Resource		
R1	2.50	2.50	2.50	2.50		
R2	1.50	1.50	3.50	3.50		
R3	2.00	4.00	2.00	2.00		
R4	4.00	2.00	2.00	2.00		
R5	2.00	3.50	3.50	1.00		
R6	3.00	4.00	1.50	1.50		
R7	1.00	3.00	3.00	3.00		
Total	16.00	20.50	18.00	15.50		
W	4%					

Table 4. Rater agreement sub-criteria.

	Sub-criteria Finance	Sub-criteria Global Geopolitics	Sub-criteria Internal Condition	Sub-criteria National Resource
Rater Agreement	11%	17%	32%	4%

The results shown in **Table 2** of the Analytical Hierarchy Process (AHP) analysis provide a clear prioritization of the factors influencing military expenditure in Indonesia, offering valuable insights into how resources should be allocated to ensure national security while maintaining economic stability. The analysis identifies National Resources as the most critical factor, followed by Internal Geopolitics, Finance, and Global Geopolitics. This prioritization reflects Indonesia's strategic focus on leveraging its natural wealth and ensuring internal stability as key drivers of defense spending

3.1.1. National resources

The AHP results highlighted National Resources as the top priority, with a criterion weight of 0.3387. This finding underscores the critical role that Indonesia's natural wealth, particularly oil, plays in supporting its military expenditure. Within this category, natural resources (weight: 0.3981) emerged as the most significant subcriterion, indicating that Indonesia's defense strategy depends heavily on the revenue generated from its natural assets. The high ranking of oil income (weight: 0.2709) further emphasizes the importance of resource-based revenue in funding military operations. The inclusion of population (weight: 0.3309) as a significant factor also indicates the importance of human resources in sustaining military capabilities. This reliance on natural and human resources suggests that Indonesia's defence budget is closely tied to its economic base, which is largely supported by the extraction and management of these resources.

3.1.2. Internal geopolitics

Internal Geopolitics ranked as the second most important criterion, with a weight of 0.2865. This indicates that domestic and internal security are paramount in shaping Indonesia's military expenditures. Among the sub-criteria, political stability (weight: 0.2604) was the most influential, reflecting the need for a stable political environment to ensure consistent and strategic defense spending. The high ranking of the number of internal conflicts (weight: 0.1568) and political colors (democracy/ideology) (weight: 0.1564) suggests that Indonesia must allocate significant re-sources to manage internal threats and navigate the political landscape. These findings align with Indonesia's security environment, in which internal conflicts and political dynamics often require substantial military engagement. The relatively lower priority of corruption controls (weight: 0.0914) and the Democracy index (weight: 0.0791) indicate that while governance and democratic factors are important, they are less pressing compared to the need to maintain political stability and manage internal conflicts.

3.1.3. Finance

The Finance criterion, with a weight of 0.2301, ranks third in importance, highlighting the crucial role of economic factors in determining military expenditure. The dominant sub-criterion within this category is GDP (weight: 0.1775), which underscores the direct relationship between economic growth and the ability to sustain defense spending. Robust GDP provides the financial capacity necessary for Indonesia to support its military ambitions. The significance of non-milex (weight: 0.1399) and exchange rates (weight: 0.1383) reflects the impact of broader economic policies and global financial dynamics on military spending. The influence of inflation (weight: 0.1317) and debt (weight: 0.1153) further highlights the importance of managing economic stability to maintain an effective defence budget. These findings indicate that Indonesia's economic performance directly influences its military expenditure, with any disruptions in economic stability potentially impacting its defense capabilities.

3.1.4. Global geopolitics

Global Geopolitics is ranked fourth, with a criterion weight of 0.1447, indicating that, while international relations and external threats are important, they are less critical than domestic factors and economic stability. Within this criterion, global war (weight: 0.1721) and regional average milex (weight: 0.1717) are the most significant sub-criteria, suggesting that Indonesia's defense spending is influenced by global and regional military trends. The emphasis on neighbor expenditure (weight: 0.1666) indicates the importance of regional dynamics, where military investments by neighboring countries can drive Indonesia's defense budget. External conflict (weight: 0.1637) also plays a crucial role, highlighting the need for Indonesia to prepare for potential conflicts beyond its borders. The lower ranking of Allies' expenditure (weight: 0.0878) suggests that while alliances are beneficial, they are not the primary drivers of Indonesia's military spending decisions. This finding reflects Indonesia's focus on self-reliance and regional security dynamics rather than heavy dependence on alliances

3.2. Rater agreement

To understand the alignment of priorities among stakeholders in defense spending, the study examines the rater agreement on the main criteria. The analysis reveals varying degrees of consensus across the criteria—finance, global geopolitics, internal conditions, and national resources—indicating challenges in achieving a unified perspective. This divergence suggests the need for further discussions to align these priorities and develop a more cohesive defense budgeting strategy, as detailed in **Table 3**.

Table 3 provides insight into the level of consensus among respondents regarding the prioritization of factors influencing military expenditure. The data indicate varying degrees of agreement across four main criteria: finance, global geopolitics, internal conditions, and national resources. The calculated value of W = 4% reflects a relatively low level of consensus among the respondents, suggesting that there is some divergence in opinions regarding the importance of these criteria. The total scores for each criterion, calculated from the ratings provided by the seven respondents, show that Global Geopolitics received the highest total score (20.50), followed by Internal Condition (18.00), Finance (16.00), and National Resources (15.50). This distribution suggests that, on average, respondents consider Global Geopolitics slightly more important than other criteria. However, the low W value indicates that this consensus is not strong, with respondents providing varying ratings that lead to a wide spread in the data. The low consensus, indicated by W = 4%, is attributed to the complexity of the decision-making process and the different perspectives or areas of expertise of the respondents. This divergence in opinions highlights the challenges in reaching a unified decision on the prioritization of criteria in military expenditure. This underscores the importance of considering multiple perspectives and possibly conducting further discussions or iterations to align the understanding and valuation of these key factors among stakeholders. This process is crucial for developing a more cohesive and well-supported defense budgeting strategy.

Following the analysis of the main criteria, it is essential to delve deeper into the sub-criteria that further define the nuances of each category influencing military expenditure. **Table 4** presents the rater agreement on these sub-criteria, offering a more granular view of how respondents perceive the relative importance of specific factors within the broader categories of finance, global geopolitics, internal conditions, and national resources.

The results of the rater agreement analysis for the AHP sub-criteria across different categories "Finance, Global Geopolitics, Internal Conditions, and National Resources" revealed varying levels of consensus among the respondents. The coefficient of agreement was 11% for finance, 17% for Global Geopolitics, 32% for Internal Conditions, and 4% for National Resources. These relatively low rater agreement percentages suggest significant divergence in the perspectives of the stakeholders involved in the evaluation process. The particularly low agreement in the National Resources category (4%) and finance category (11%) indicates substantial differences in opinion among the respondents, likely reflecting the diverse priorities and interests of the various ministries and institutions represented. This lack of consensus suggests that each stakeholder group may have emphasized criteria that

align more closely with their respective mandates and organizational objectives, leading to a fragmented view of what should be prioritized in defense budgeting. The higher, yet still moderate, agreement observed in the Internal Conditions category (32%) suggests a somewhat more unified perspective, potentially due to shared concerns regarding domestic stability and security. However, the overall low levels of agreement across all categories imply that there is no single cohesive view among stakeholders regarding the factors that should guide defense spending. This divergence underscores the challenges of harmonizing the interests of different ministries and institutions when formulating a comprehensive and strategic defense budget.

4. Discussion

This study's findings, using the Analytical Hierarchy Process reveal the prioritization of factors influencing Indonesia's defense spending, with National Resources emerging as the top priority (0.3387). This result aligns with existing literature emphasizing the role of resource-based revenues, particularly oil, in supporting military expenditures in resource rich countries (Akpolat and Bakirtas, 2020). However, the low rater agreement in the National Resources category (4%) suggests significant divergence among stakeholders, likely due to differing institutional priorities, indicating the need for more cohesive strategic planning in defense budgeting.

Internal Geopolitics, weighted at 0.2865, highlights the importance of domestic stability, with Political Stability (0.2604) and Internal Conflicts (0.1568) as key subcriteria. These findings are consistent with research by Do (2021) and Gibson (2020), emphasizing the necessity of political stability for effective defense spending. Despite some agreement in this area (32%), low consensus in Finance (11%) and Global Geopolitics (17%) reflects challenges in balancing economic, internal security, and external threats in defense budgeting. The overall low levels of agreement underscore the need for enhanced coordination among stakeholders to develop a more integrated and responsive defense budgeting strategy. Even though there are no direct case studies were conducted, the primary data obtained through focus group discussions with defense and policy experts provided comprehensive insights that validate the theoretical findings of this study. These expert opinions offer a detailed understanding of Indonesia's military expenditure, making the data robust enough to inform both academic research and policy-making.

Historical patterns in Indonesia's military expenditure reveal the profound influence of geopolitical tensions and cultural context on budget decisions. For instance, during the Cold War, Indonesia significantly increased its defense spending in response to perceived external threats, while cultural factors, such as maintaining national unity and internal stability, played a crucial role in shaping defense policies. Additionally, current defense spending is influenced by policies like the Minimum Essential Force (MEF) framework, which mandates a specific level of military readiness. Understanding these historical and policy contexts is essential for comprehending how current defense expenditures are structured and prioritized

Military expenditures, particularly in technology development and defense R&D, have the potential to foster long-term technological innovations that can be transferred

to civilian industries. Advancements in communication systems, transport infrastructure, and material sciences developed through defense funding could lead to increased productivity and economic growth in the civilian economy over time. Future research should explore the long-term impacts of military spending on technological innovation and its potential contributions to civilian economies and national security. Additionally, studies should investigate the environmental consequences of defense expenditures, particularly in sensitive regions. Examining how evolving stakeholder priorities influence defense policy implementation and budget allocation is crucial, along with analyzing the effects of global geopolitical shifts and advancements in cybersecurity to guide the development of resilient and adaptive defense strategies.

5. Conclusion

This study advises Indonesian policymakers to prioritize national resources and internal geopolitics in defense budgeting to enhance both the effectiveness and sustainability of defense policies. To achieve strategic alignment, the government should focus on securing critical resource-rich areas, such as oil and gas infrastructure, while simultaneously addressing internal security challenges caused by regional instabilities. A well-rounded defense policy must balance immediate security needs with long-term preparedness. This involves allocating resources to protect national assets, strengthening internal stability, and investing in technologies to counter emerging threats like cyberattacks. Indonesia's defense spending should take a multidimensional approach that integrates resource protection, military readiness, and internal security enhancement. Future research should explore how shifting stakeholder priorities influence the implementation of defense policies and budget allocation. Incorporating case studies and interviews with key stakeholders involved in Indonesia's defense budgeting process will provide a comprehensive understanding of the practical impacts of military expenditure. Moreover, examining the effects of global geopolitical shifts and technological advancements, particularly in cybersecurity, will be vital for guiding the development of adaptive and resilient defense strategies.

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References

- Acharya, A. (2013). Power Shift or Paradigm Shift? China's Rise and Asia's Emerging Security Order. International Studies Quarterly, 58(1), 158–173. https://doi.org/10.1111/isqu.12084
- Aiyedogbon, J. O., Ohwofasa, B. O., & Ibeh, S. E. (2012). Does Military Expenditure Spur Inflation? Autoregressive Distributed Lag (ARDL) & Causality Analysis for Nigeria. In European Journal of Business and Management, 4(20).
- Alamirew, M., & Phd, W. (n.d.). Foreign Direct Investment, Military Expenditure and Foreign Aid in Sub-Saharan Africa (Panel Data Analysis). Available online: https://ssrn.com/abstract=3689786 (accessed on 3 May 2024).
- Arezki, R., & Brueckner, M. (2021). Natural Resources and Civil Conflict: The Role of Military Expenditures. Journal of Risk and Financial Management, 14(12), 575. https://doi.org/10.3390/jrfm14120575
- Arif, I., Khan, L., & Raza, S. A. (2019). Effects of corruption on military expenditures. Journal of Financial Crime, 26(3), 774– 785. https://doi.org/10.1108/jfc-09-2018-0092
- Armey, L. E., & McNab, R. M. (2017). What Goes Up Must Come Down: Military Expenditure and Civil Wars. Defence and Peace Economics, 30(5), 570–591. https://doi.org/10.1080/10242694.2017.1405235

Azam, M., & Feng, Y. (2015). Does military expenditure increase external debt? Evidence from Asia. Defence and Peace Economics, 28(5), 550–567. https://doi.org/10.1080/10242694.2015.1072371

- Bakirtas, T., & Akpolat, A. G. (2020). The relationship between crude oil exports, crude oil prices and military expenditures in some OPEC countries. Resources Policy, 67, 101659. https://doi.org/10.1016/j.resourpol.2020.101659
- Böhmelt, T., & Bove, V. (2014). Forecasting military expenditure. Research & Politics, 1(1). https://doi.org/10.1177/2053168014535909
- Bove, V., & Brauner, J. (2014). The demand for military expenditure in authoritarian regimes. Defence and Peace Economics, 27(5), 609–625. https://doi.org/10.1080/10242694.2014.925325
- Bove, V., & Nisticò, R. (2014). Military in politics and budgetary allocations. Journal of Comparative Economics, 42(4), 1065–1078. https://doi.org/10.1016/j.jce.2014.02.002
- Chairil, T., Sinaga, D., & Febrianti, A. (2013). Relationship between Military Expenditure and Economic Growth in ASEAN: Evidence from Indonesia. JAS (Journal of ASEAN Studies), 1(2), 90. https://doi.org/10.21512/jas.v1i2.63
- Christie, E. H. (2017). The Demand for Military Expenditure in Europe: The Role of Fiscal Space in the Context of a Resurgent Russia. Defence and Peace Economics, 30(1), 72–84. https://doi.org/10.1080/10242694.2017.1373542
- Deng, L., & Sun, Y. (2015). The effects of local elections on national military spending: A cross-country study. Defence and Peace Economics, 28(3), 298–318. https://doi.org/10.1080/10242694.2015.1061154
- Do, T. K. (2021). Resource curse or rentier peace? The impact of natural resource rents on military expenditure. Resources Policy, 71, 101989. https://doi.org/10.1016/j.resourpol.2021.101989
- Dudzeviciute, G., Peleckis, K., & Peleckiene, V. (2016). Tendencies and Relations of Defense Spending and Economic Growth in the EU Countries. Engineering Economics, 27(3). https://doi.org/10.5755/j01.ee.27.3.15395
- Dumas, L. J. (2014). The Real Effects of Military Spending on Security. Peace Economics, Peace Science and Public Policy, 20(3), 377–393. https://doi.org/10.1515/peps-2014-0018
- Erdoğan, S., Çevik, E. İ., & Gedikli, A. (2020). Relationship between oil price volatility and military expenditures in GCC countries. Environmental Science and Pollution Research, 27(14), 17072–17084. https://doi.org/10.1007/s11356-020-08215-3
- Fonfría, A., & Marín, R. (2012). Determinants of the demand for defence expenditure in the NATO countires. Journal of the Higher School of National Defense Studies, 12, 9-30.
- George, J., Hou, D., & Sandler, T. (2018). Asia-Pacific Demand for Military Expenditure: Spatial Panel and SUR Estimates. Defence and Peace Economics, 30(4), 381–401. https://doi.org/10.1080/10242694.2018.1434375
- Gibson, C. W. (2018). Determinants of State Spending Patterns in Arab League Member States: a Post-Arab Spring Analysis, 1996–2014. International Journal of Politics, Culture, and Society, 33(1), 23–48. https://doi.org/10.1007/s10767-018-9293-y
- Global Firepower. (2024). Indonesia military strength. Available online: https://www.globalfirepower.com/country-militarystrength-detail.php?country_id=indonesia (accessed on 7 August 2024)

- Graham, J. C., & Mueller, D. (2019). Military Expenditures and Income Inequality among a Panel of OECD Countries in the Post-Cold War Era, 1990–2007. Peace Economics, Peace Science and Public Policy, 25(1). https://doi.org/10.1515/peps-2018-0016
- Hewitt, D. P. (1991). Military Expenditures in the Developing World. Finance & Development. pp. 22-25.
- Hirnissa, M. T., Habibullah, M. S., & Baharom, A. H. (2009). Military Expenditure and Economic Growth in Asean-5 Countries. Journal of Sustainable Development, 2(2). https://doi.org/10.5539/jsd.v2n2p192
- Hou, D. (2018). The Determinants of Military Expenditure in Asia and Oceania, 1992–2016: A Dynamic Panel Analysis. Peace Economics, Peace Science and Public Policy, 24(3). https://doi.org/10.1515/peps-2018-0004
- Hou, N., & Chi, Z. (2021). Sino-U.S. Relations and the Demand for Military Expenditure in the Indo-Pacific Region. Defence and Peace Economics, 33(6), 751–766. https://doi.org/10.1080/10242694.2021.1904358
- Indonesia Ministry of Defence. (2016). Regulation of the Minister of Defense Number 39 of 2015 concerning the Minimum Essential Force Development Policy of the Indonesian National Army (Indonesian). Berita Negara Republik Indonesia No. 509.
- Josselin, D., & Malizard, J. (2021). Determinants of Defense Spending: The Role of Strategic Factors in France. Defence and Peace Economics, 33(8), 938–955. https://doi.org/10.1080/10242694.2021.1907985
- Kauder, B., & Potrafke, N. (2015). The growth in military expenditure in Germany 1951–2011: did parties matter? Defence and Peace Economics, 27(4), 503–519. https://doi.org/10.1080/10242694.2015.1050276
- Khan, U. H., & Imran, M. D. (2023). Relationship between Inflation and Other Macro Economics Factors: Comparative Study of Germany, Japan and New Zealand. Journal of Economic Impact, 5(1), 76–87. https://doi.org/10.52223/jei5012309
- Kollias, C., Paleologou, S.-M., Tzeremes, P., et al. (2018). The demand for defense spending in Russia: Economic and strategic determinants. Russian Journal of Economics, 4(3), 215–228. https://doi.org/10.3897/j.ruje.4.27086
- Kuokštytė, R., Kuokštis, V., & Miklaševskaja, I. (2020). External and domestic political determinants of defence spending: A time-series cross-section analysis of EU member states. European Security, 30(2), 197–217. https://doi.org/10.1080/09662839.2020.1843437
- Markowski, S., Chand, S., & Wylie, R. (2017). Economic Growth and Demand for Military Expenditure in the Indo-Pacific Asia Region. Defence and Peace Economics, 28(4), 473–490. https://doi.org/10.1080/10242694.2016.1274059
- Murdoch, J. C., & Sandler, T. (1984). Complementarity, free riding, and the military expenditures of NATO allies. Journal of Public Economics, 25(1), 83-101. https://doi.org/https://doi.org/10.1016/0047-2727(84)90045-8
- Myeong, S., Jung, Y., & Lee, E. (2018). A Study on Determinant Factors in Smart City Development: An Analytic Hierarchy Process Analysis. Sustainability, 10(8), 2606. https://doi.org/10.3390/su10082606
- Neubauer, J., & Odehnal, J. (2018). Security and economic determinants of the demand for Czech military expenditure: ARDL approach. AIP Conference Proceedings. https://doi.org/10.1063/1.5043741
- Nordhaus, W., Oneal, J. R., & Russett, B. (2012). The Effects of the International Security Environment on National Military Expenditures: A Multicountry Study. International Organization, 66(3), 491–513. https://doi.org/10.1017/s0020818312000173
- Odehnal, J., Neubauer, J., Olejníček, A., et al. (2021). Empirical Analysis of Military Expenditures in NATO Nations. Economies, 9(3), 107. https://doi.org/10.3390/economies9030107
- Pacific, Y. K. T., Shan, L. J., & Ramadhan, A. A. (2017). Military Expenditure, Export, FDI and Economic Performance in Cameroon. Global Business Review, 18(3), 577–589. https://doi.org/10.1177/0972150917692065
- Pamp, O., & Thurner, P. W. (2017). Trading Arms and the Demand for Military Expenditures: Empirical Explorations Using New SIPRI-Data. Defence and Peace Economics, 28(4), 457–472. https://doi.org/10.1080/10242694.2016.1277452
- Pamp, O., Dendorfer, F., & Thurner, P. W. (2018). Arm your friends and save on defense? The impact of arms exports on military expenditures. Public Choice, 177(1–2), 165–187. https://doi.org/10.1007/s11127-018-0598-1
- Saba, C. S., & Ngepah, N. (2019). Military expenditure and economic growth: evidence from a heterogeneous panel of African countries. Economic Research-Ekonomska Istraživanja, 32(1), 3586–3606. https://doi.org/10.1080/1331677x.2019.1674179
- Saba, C. S., & Ngepah, N. (2021). Military expenditure, security outcome and industrialisation in Africa: Evidence from a panel data analysis. African Security Review, 30(2), 204–222. https://doi.org/10.1080/10246029.2021.1917432
- Saputro, G. E., Mahroza, J., & Tarigan, H. (2020). The impact of the military expenditure and security expenditure structure on the security stability. Jurnal Pertahanan: Media Informasi Ttg Kajian & Strategi Pertahanan Yang Mengedepankan Identity, Nasionalism & Integrity, 6(3), 328. https://doi.org/10.33172/jp.v6i3.930

Seitz, M., Tarasov, A., & Zakharenko, R. (2014). Trade Costs, Conflicts, and Defense Spending. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2495986

Skogstad, K. (2015). Defence budgets in the post-Cold War era: a spatial econometrics approach. Defence and Peace Economics, 27(3), 323–352. https://doi.org/10.1080/10242694.2015.1034911

- Solarin, S. A. (2017). Determinants of military expenditure and the role of globalisation in a cross-country analysis. Defence and Peace Economics, 29(7), 853–870. https://doi.org/10.1080/10242694.2017.1309259
- Solarin, S. A., & Sahu, P. K. (2014). The effect of military expenditure on stock market development: panel evidence from system GMM estimates. Defence and Peace Economics, 26(3), 271–287. https://doi.org/10.1080/10242694.2014.898384
- Syafril, K., & Saputro, G. E. (2023). Relation between defense budget, purchasing power parity, foreign exchange, and external debt with military strength: evidence from Asean countries. Jurnal Darma Agung, 31(3), 349. https://doi.org/10.46930/ojsuda.v31i3.3450
- Tarapore, A. (2020). Building Strategic Leverage in the Indian Ocean Region. The Washington Quarterly, 43(4), 207–237. https://doi.org/10.1080/0163660x.2020.1850833
- Till, G. (2013). Seapower. Routledge. https://doi.org/10.4324/9780203105917
- Töngür, Ü., & Elveren, A. Y. (2013). Military Expenditures, Income Inequality, Welfare and Political Regimes: A Dynamic Panel Data Analysis. Defence and Peace Economics, 26(1), 49–74. https://doi.org/10.1080/10242694.2013.848577
- Topcu, M., & Aras, İ. (2017). Military Expenditures and Economic Growth in Central and Eastern EU Countries: Evidence from the Post-Cold War Era. European Review, 25(3), 453–462. https://doi.org/10.1017/s1062798717000114
- Vallejo-Rosero, P., García-Centeno, M. C., Delgado-Antequera, L., et al. (2020). A Multiobjective Model for Analysis of the Relationships between Military Expenditures, Security, and Human Development in NATO Countries. Mathematics, 9(1), 23. https://doi.org/10.3390/math9010023
- Wang, K.-H., & Su, C.-W. (2021). Does high crude oil dependence influence Chinese military expenditure decision-making? Energy Strategy Reviews, 35, 100653. https://doi.org/10.1016/j.esr.2021.100653
- World Bank. (2024). Military expenditure (% of GDP). The World Bank. Available online: https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS (accessed on 7 August 2024).
- Yalta, A. T., & Tüzün, F. (2020). Time Varying Determinants of US Demand for Defense Spending in the post-Cold War Era. Defence and Peace Economics, 32(7), 829–846. https://doi.org/10.1080/10242694.2020.1725856
- Yalta, A. T., & Yalta, A. Y. (2021). The Determinants of Defense Spending in the Gulf Region. Defence and Peace Economics, 33(8), 980–992. https://doi.org/10.1080/10242694.2021.1918857
- Yesilyurt, M. E., & Elhorst, J. P. (2017). Impacts of neighboring countries on military expenditures. Journal of Peace Research, 54(6), 777–790. https://doi.org/10.1177/0022343317707569