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THE INFLUENCE OF INNOVATION CULTURE AND STRATEGIC PLANNING, MEDIATED BY TECHNOLOGY ACQUISITION, ON THE COMPETITIVENESS OF THE INDONESIAN DEFENSE INDUSTRY

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ABSTRACT

This research highlights the critical role of innovation culture and strategic planning in boosting the competitiveness of the Indonesian defense industry, primarily through the mediation of technology acquisition. Our findings confirm that a robust innovation culture positively and significantly influences technology acquisition, which in turn profoundly impacts the defense industry's competitiveness. Similarly, effective strategic planning positively and significantly contributes to technology acquisition, and while its direct effect on competitiveness isn't significant, its indirect influence via technology acquisition is crucial. Despite a growing defense budget, Indonesia's continued reliance on imported defense equipment underscores the need for enhanced domestic industry competitiveness. Therefore, fostering a strong innovation culture and strategic planning focused on technology acquisition is vital for achieving national defense industry self-reliance and competitiveness.

INTRODUCTION

Every nation is obligated to possess adequate readiness and capability to confront various threats that could jeopardize its national existence. Indonesia, as a strategic archipelago nation, adheres to the principle of "Si Vis Pacem Para Bellum" (if you want peace, prepare for war), which underscores the importance of building robust defense capabilities with high deterrence as a prerequisite for maintaining peace and national

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sovereignty (Kementerian Pertahanan Republik Indonesia, 2014). The concept of national defense, as stipulated in Law Number 3 of 2002, encompasses all systematic and integrated efforts to defend the state, safeguard the territorial integrity of the Unitary State of the Republic of Indonesia (NKRI), and ensure the safety of the entire nation from any threats and disturbances. The implementation of national defense is carried out through comprehensive policies, including the development of national defense posture and the growth of the defense industry. These policies are supported by increased and transparent budget allocation, guided by the principle of priority, and strictly supervised to prevent misuse and ensure accountability in budget management (Kebijakan Umum Pertahanan Negara Tahun 2015-2019, 2015).

In the context of strengthening national defense, the government consistently promotes research and development (R&D) efforts in the defense industry and technology sector. This initiative is crucial for stimulating the growth of a resilient and competitive domestic defense industry. Significant regulatory support is provided through Law Number 16 of 2012 concerning the Defense Industry. This law serves as a legal foundation aimed at realizing self-reliance and enhancing the nation's competitiveness in meeting the needs for defense and security equipment (alpalhankam). The defense industry policy mandated by this law covers a broad spectrum, ranging from research and development, strategic cooperation among industries, universities, and research institutions, enhancement of competent human resources (HR), to improvements in alpalhankam maintenance and procurement systems.

The formulation of a robust National Defense Posture heavily relies on the development of the domestic defense industry. This is done not only to reduce dependence on foreign supplies and mitigate embargo risks but also to create economic multiplier effects and achieve technological mastery. The implementation process of defense industry policies involves strict coordination, guidance, and supervision. The National Defense Strategy and National Defense Doctrine serve as primary guides in the development of the National Defense Posture. In military strength building, especially in the procurement of primary weapon systems (alutsista), budget constraints pose a significant challenge, thus encouraging a focus on the development of the domestic defense industry. Global and regional strategic environmental dynamics also influence the needs and direction of defense posture development. To date, the fulfillment of the Minimum Essential Force (MEF), a benchmark for defense readiness, has reached approximately 64% in Strategic Plan (Renstra) III for the 2020-2024 period.

The detailed planning for TNI's alutsista needs refers to the established Defense Posture, which contains specifications for essential alutsista strength and capabilities. The alutsista procurement scheme considers various aspects, including the source of procurement (domestic or foreign), financing sources (Pure Rupiah, Domestic Loans, or Foreign Loans), as well as offset requirements such as counter-trade (barter), local content, and offset as mechanisms for technology acquisition. Research, development, and engineering (litbangyasa) activities, carried out by both government agencies and the defense industry, play a vital role in enhancing capabilities and competitiveness.

Despite strong efforts to advance the national defense industry, the alutsista market in Indonesia has monopsonistic characteristics, where the government/TNI acts as the sole buyer. The relationship between the defense industry and the government is

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fundamentally a customer-supplier relationship, with the government determining demand through defense spending allocations. Within this framework, the government is also responsible for establishing the Defense Technology and Industry Development Program (Bangtekindhan) to build industrial capabilities through technology mastery, realize production self-reliance, and provide relevant incentives.

Data indicates that Indonesia's defense budget has significantly increased over the last decade, with approximately 30% of the total budget allocated for capital expenditure, the majority of which is for alutsista procurement (Luhut Pandjaitan, 2016). This condition actually creates a large market opportunity for the domestic defense industry. However, in reality, most alutsista spending is still dominated by imports from abroad. This indicates limitations in the capabilities of the domestic defense industry, which has not yet been able to fully compete in the global market. The larger allocation of Foreign Loans (PLN) for alutsista procurement compared to Domestic Loans (PDN) clearly shows the dominance of foreign alutsista supply and the sub-optimal competitiveness of the national defense industry. Even until 2019, no Indonesian defense industry had succeeded in entering SIPRI's list of the top 100 global arms producers (SIPRI Military Expenditure Database, 2019). This phenomenon poses a serious challenge to efforts to achieve defense self-reliance.

To address the technology gap and enhance capacity, technology acquisition strategies are crucial. Technology acquisition can be carried out internally, through independent alutsista R&D efforts, or externally, through various mechanisms such as transfer of technology, technology purchase, joint development, and offset (Astan, 2015). Law Number 16 of 2012 specifically regulates the procurement of alutsista from abroad with strict requirements, including domestic industry participation, technology transfer, guarantees against embargoes, and a mandatory local content/offset of at least 85% of the contract value (with a minimum of 35% being local content or offset). By 2018, at least 35 technology transfer programs had been implemented as part of offset for foreign alutsista procurement. This external technology acquisition, if well managed, has significant potential to enhance the capabilities and competitiveness of the domestic defense industry.

The success of technology acquisition is heavily influenced by a company's internal culture. Innovation culture plays a crucial role in this success. Innovation culture is defined as a multidimensional atmosphere encompassing shared values, assumptions, and beliefs held by organizational members, which collectively encourage the exploration of new opportunities and knowledge and generate innovations responsive to market demands (C. Naranjo-Valencia & Calderon-Hernández, 2018; Duygulu et al., 2015). Furthermore, strategic planning is an inseparable key element. Strategic planning is a systematic process of selecting organizational objectives, formulating strategies, policies, and strategic programs necessary to achieve those objectives, and establishing effective implementation methods (Handoko et al., 2021). Effective strategic planning is a determinant of success that directly affects organizational performance and defines a company's competitive position in the market. Based on the Resource-Based View (RBV) framework and Porter's Diamond Model, the mastery of unique internal resources and the ability to continuously innovate, as well as strategies that are adaptive to market conditions and supporting industries, are the main pillars of competitiveness. Therefore,

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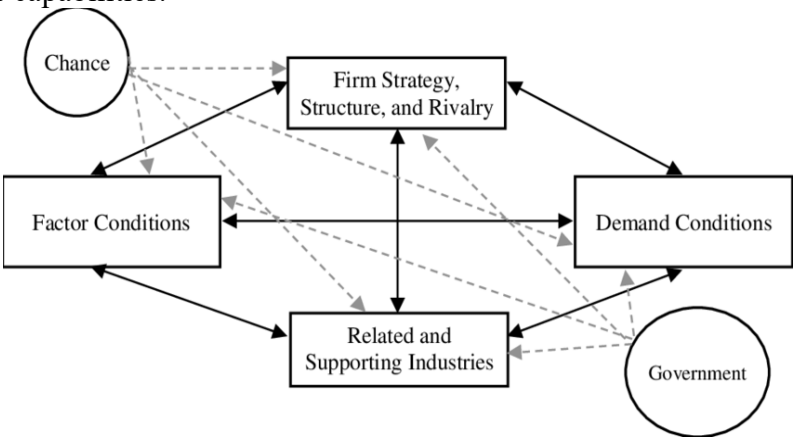
this research will thoroughly examine how innovation culture and strategic planning, mediated by technology acquisition, influence the competitiveness of the defense industry in Indonesia, given the importance of this sector for national self-reliance and security.

LITERATURE REVIEW

Porter's Diamond Model Theory

Porter's theory of competitiveness stems from the belief that classical economic theory, which explains comparative advantage, is insufficient. According to Porter, a country gains a competitive advantage when its domestic companies are competitive. National competitiveness is determined by the ability of industries to innovate and enhance their capabilities.



Picture 1. Porter's Diamond Model

Porter proposed the Diamond Model (DM), which consists of four determinants of National Competitive Advantage (NCA) (Porter M., 2008). These four attributes are: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry.

Factor conditions refer to inputs used as factors of production, such as human resources, natural resources, capital, and infrastructure. According to Porter, the key to production factors lies in their creation, rather than inheritance. Resource scarcity often helps countries become competitive, whereas an abundance of resources may lead to inefficiency. Scarcity can stimulate innovation.

Demand conditions refer to the presence of a domestic market that plays a vital role in generating competitiveness. Such markets are characterized by the ability to demand superior products, driven by the need for high-quality goods and services as well as close relationships between firms and customers.

Related and supporting industries refer to the existence of a strong network and close linkages between supporting industries and companies, where positive relationships and support lead to improved competitiveness. Porter developed this concept further through industrial clusters or agglomeration, which offer benefits such as potential technology and knowledge spillovers (Porter M., 2008).

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Firm strategy, structure, and rivalry refer to the strategies and organizational structures adopted by most companies and the intensity of competition within a specific industry. Strategy factors may include at least two aspects: capital markets and individual career choices. Domestic capital markets influence company strategies, while individuals often make career decisions based on opportunities and prestige. A country will be competitive in industries where key personnel are seen as prestigious. Structure follows strategy and is built to support its implementation. High levels of rivalry encourage innovation.

Innovation Culture

Organizations increasingly incorporate the concept of innovation into their vision, mission, and objective statements. The position of Chief Innovation Officer has become more common, and innovation centers have emerged across university campuses. However, this trend has also led to misunderstandings about innovation, resulting in poor decision-making by individuals and organizations. This may explain why many companies find innovation elusive (Kuratko et al., 2014).

Several scholars associate innovation with dimensions such as product, market, process, behavioral, and strategic innovation. A common thread among these perspectives is the view of innovation as something new that leads to change (Robbins & Judge, 2017).

Diffusion of Innovation, as defined by Mora Cortez & Johnston (2019), is the process by which an innovation is communicated through certain channels over a period of time among the members of a social system. Innovation refers to an idea, practice, or object perceived as new by an individual or group. However, what is perceived as new by one group may not be perceived the same way by another, depending on how individuals or groups interpret the idea, practice, or object.

The diffusion of innovation is a process through which new ideas or objects are gradually adopted and spread with the aim of continuously transforming a society from one place to another, from one time period to the next, and from one domain to another among members of a social system.

According to Mora Cortez & Johnston (2019), there are four key elements in the diffusion of innovation process:

1. Innovation –an idea, action, or object perceived as new by an individual. The novelty of the innovation is measured subjectively from the perspective of the individual receiving it.
2. Communication channels – the means by which innovation messages are transmitted from a source to a recipient.
3. Time – the process by which an individual moves from first knowledge of the innovation to a decision to adopt or reject it.
4. Social system – a collection of functionally distinct units engaged in cooperative efforts to solve problems and achieve shared goals.

Strategic Planning

Strategy is defined as a plan formulated in the form of actions to achieve a clear goal. The concept of strategy is often associated with the military, as the term was

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originally used by Greek generals in wartime (Kaliappen & Hilman, 2017; Yi Chia, 2015).

Planning serves to minimize the risks of failure in an organization and reduce uncertainty by anticipating future conditions and analyzing the consequences of each intended action (Badrun, 2021).

Strategic planning is understood as a disciplined effort to make fundamental decisions and actions that shape and guide what an organization (or other entity) is, what it does, and why it does it (Rafat & Salama, 2017).

According to Sondang (2011), the dimensions of strategic planning include:

1. Top Management Involvement Dimension
   One characteristic of strategic decisions is that they affect all aspects of the organization. Only at the top management level can the implications of various internal and external environmental challenges and demands be fully perceived—challenges that may not be apparent to lower-level managers. Top management holds the authority to allocate resources, infrastructure, and other necessities required to implement the chosen decisions.
2. Resource, Facility, and Fund Allocation Dimension
   Top management acts as the integrator among various work units, each of which may feel entitled to control funds, facilities, infrastructure, or workforce. Depending on the nature of the assignment, objectives, and time constraints, one work unit may be prioritized as "the most strategic" at a given moment, while at another time, a different unit may hold that status.
3. Strategic Decision Time Horizon Dimension
   Another characteristic of strategic decisions is their relatively long-term orientation. It is essential to note that once top management makes a strategic decision, the organization's image is created and sustained based on that decision.
4. Future Orientation Dimension
   Organizations require competent managers who possess both anticipatory and proactive attitudes. These qualities prepare management to respond effectively to future changes and avoid being caught off guard by sudden developments.
5. Multifaceted Strategic Issues Consequence Dimension
   Strategic decisions tend to be integrative and coordinative because they generally impact all components or elements of an organization.
6. External Environmental Dimension
   An organization typically both influences and is influenced by its external environment, which is composed of factors generally beyond its control. Therefore, in order to achieve its desired future success, the organization must carefully consider and account for these external factors.

RESEARCH METHOD

This study employs a quantitative approach with a descriptive-verificative design. The variables investigated include Innovation Culture, Strategic Planning, Technology Acquisition, and Defense Industry Competitiveness, each measured using several specific dimensionsData will be collected through questionnaires distributed to 160 respondents,

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selected via proportionate stratified random sampling from various relevant defense institutions and industries across Indonesia.The collected data will be analyzed using Structural Equation Modeling (SEM) to test the relationships among variables. The validity of indicators will be ensured by checking Standardized Loading Factor (SLF > 0.5 and t-value > 1.96), while construct reliability will be assessed through Composite Reliability (CR > 0.7) and Average Variance Extracted (AVE > 0.5).

RESEARCH RESULTS AND DISCUSSION

Data Description

The "Data Description" section aims to provide an initial overview and summary of the characteristics of the collected data before further inferential analysis. Descriptive analysis was conducted to process and summarize respondents' perceptions regarding the key variables in this study: Innovation Culture, Strategic Planning, and Technology Acquisition.

In this study, the average value of respondents' perceptions was measured using a specific scale. Based on the average calculations, all three variables—Innovation Culture, Strategic Planning, and Technology Acquisition—fall into the "Strongly Agree" or "Very Good" category. This "Strongly Agree/Very Good" category indicates that the majority of respondents hold a very positive view and assessment of the conditions of these variables within the context of the Indonesian defense industry.

1. Innovation Culture as "Strongly Agree/Very Good": This suggests that respondents consistently observe a work environment that strongly supports creativity, openness to new ideas, and a strong drive for improvement and development within their organizations. Aspects such as innovative leadership, supportive teamwork, proactive individuals in innovation, and organizations adaptive to change were rated very positively.
2. Strategic Planning as "Strongly Agree/Very Good": This reflects the perception that long-term planning processes in the defense industry have been carried out very effectively. Respondents highly rated top management's involvement in strategy formulation, adequate resource allocation, a strong future orientation, and adaptability to a dynamic external environment.
3. Technology Acquisition as "Strongly Agree/Very Good": This perception indicates that the defense industry's efforts to acquire or develop new technology, whether through internal R&D or technology transfer from abroad, have been very successful. Respondents highly rated the success of acquisition projects, the ability to internalize technology, and the potential for sustainable technology partnerships.

Overall, these descriptive data results provide a foundation that the independent and mediating variables in the study are in very supportive conditions, consistent with the perceptions of stakeholders in the defense industry. This is important because positive initial conditions can influence how these variables interact and affect competitiveness.

Data Quality Test

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Before proceeding with the main data analysis or hypothesis testing (inferential analysis), it is crucial to ensure the collected data is of good quality, meaning it is valid and reliable. This process is known as the data quality test. Its purpose is to guarantee that the research instrument (questionnaire) accurately measures what it intends to measure (validity) and provides consistent results (reliability).

1.Validity Test

Validity indicates the extent to which an instrument measures the concept it is supposed to measure. In this study, validity was tested for all indicators used to form the latent variables, including both exogenous variables (Innovation Culture and Strategic Planning) and endogenous variables (Technology Acquisition and Industry Competitiveness).

The results of the validity test are determined by two main criteria:

a. Standardized Loading Factor (SLF) value greater than 0.5: The Standardized Loading Factor is the regression coefficient between an indicator (questionnaire item) and the construct (latent variable) it measures. A high SLF value (generally > 0.5 or > 0.7) indicates that the indicator contributes strongly and relevantly to measuring the intended construct. The higher the value, the better the indicator represents its latent variable.
b. t-value greater than 1.96: This t-value is used to test the statistical significance of the SLF. A t-value greater than the critical value of 1.96 (at a 5% two-tailed significance level) indicates that the relationship between the indicator and the construct is statistically significant. This means the indicator significantly contributes to measuring the latent construct.

Based on these two criteria, all indicators in this study were found to have good validity. This ensures that each question in the questionnaire accurately reflects the variable it aims to measure.

2. Reliability Test

Reliability refers to the consistency and stability of measurement. An instrument is considered reliable if it yields consistent results when measurements are repeated or if the items within the instrument are consistent with each other. In the context of this study, reliability was tested for each latent variable (both exogenous and endogenous).

The results of the reliability test are determined by two main criteria:

a. Composite Reliability (CR) value greater than 0.7: Composite Reliability is a measure of the internal consistency of a construct measured by several indicators. A CR value above 0.7 (some literature suggests 0.6) indicates that the indicators measuring a construct have good internal consistency and are reliable.
b. Average Variance Extracted (AVE) value greater than 0.5: Average Variance Extracted measures the average variance explained by the construct from its indicators, compared to the variance due to measurement error. An AVE value above 0.5 indicates that more than 50% of the variance of the indicators is explained by their latent construct, which is an indication of good reliability and convergent validity.

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Based on these two criteria, all latent variables in this study demonstrated good model reliability. This means that the questionnaire instrument used can be relied upon to produce consistent and stable data.

Overall, the positive results of these data quality tests provide confidence that the obtained data is accurate, consistent, and suitable for further analysis, particularly for hypothesis testing using Structural Equation Modeling (SEM).

Hypothesis Testing

This section presents the results of the hypothesis testing, summarizing the relationships between variables, the statistical outcomes, and the decisions regarding each hypothesis.

Table 1: Hypothesis Testing Results

Hypothesis	Variable Relationship	Test Results (Path Coefficient; t-value)	Hypothesis Decision	Contribution of Direct Influence (%) / Additional Information
H1	Innovation Culture → Technology Acquisition	Positive and significant (0.17; 2.07 > 1.96)	Accepted	0,145139
H2	Strategic Planning → Technology Acquisition	Positive and significant (0.65; 6.04 > 1.96)	Accepted	42.25.00
H3	Innovation Culture → Defense Industry Competitiveness	Positive and significant (0.24; 3.11 > 1.96)	Accepted	0,261111
H4	Strategic Planning → Defense Industry Competitiveness	Positive but not significant (0.01; 0.14 < 1.96)	Not Accepted	-
H5	Technology Acquisition → Defense Industry Competitiveness	Positive and significant (0.69; 5.69 > 1.96)	Accepted	47.61
H6	Innovation Culture mediated by Technology Acquisition → Defense Industry Competitiveness	Positive and significant	Accepted	Indirect influence is more dominant
H7	Strategic Planning mediated by Technology Acquisition → Defense Industry Competitiveness	Positive and significant	Accepted	Indirect influence is more dominant

Discussion

Developing Indonesia's national defense capability is a fundamental strategic imperative. It ensures and maintains the nation's sovereignty, protects the territorial integrity of the Unitary State of the Republic of Indonesia (NKRI) from Sabang to Merauke, and safeguards the entire nation from various threats and disturbances. Indonesia's defense philosophy is firmly rooted in the classical adage "Si Vis Pacem Para Bellum," which literally means "If you desire peace, prepare for war." This principle underscores that to create and maintain stable peaceful conditions, a nation must possess strong defense capabilities with high deterrence, capable of preventing aggression or

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effectively responding to any threat.

The implementation of this principle is realized through the systematic development of defense strength, based on the Minimum Essential Force (MEF) concept and a comprehensive national defense strategy. The MEF concept is not merely a quantitative target; rather, it is a measurable and realistic framework for developing the TNI's minimum core strength, designed to face the most probable spectrum of threats with available resources. This national defense strategy is then detailed in the Ministry of Defense's Strategic Plan (Renstra) document. This Renstra serves as a roadmap that not only regulates the planned and sustainable procurement of Primary Weapon Systems (Alutsista) but also forms a framework for the broader development of national defense capabilities, encompassing aspects of doctrine, organization, personnel, logistics, and technology.

Within the framework of building an independent and long-term resilient defense force, the role of the domestic defense industry becomes a crucial component that cannot be ignored; indeed, it must be a strategic priority. The domestic defense industry plays a multifunctional role: not only as the primary provider of alutsista tailored to Indonesia's geographical characteristics and defense doctrine but also as a pillar of supply independence, reducing critical reliance on foreign producers, especially in facing potential embargoes or geopolitical fluctuations. Furthermore, the development of the defense industry also provides significant multiplier effects for the national economy, such as job creation, knowledge transfer, civilian-military technology development, and strengthening domestic supply chains.

To optimize its role and enhance the capabilities of the defense industry on the global stage, strengthening fundamental aspects through technology acquisition is essential. This technology acquisition can be pursued through two main, complementary paths: internally, through investment in innovative independent research and development (R&D) to create new technologies specific to and in accordance with national needs; and externally, through various forms of international cooperation, such as technology transfer, joint production, joint development, or offset schemes, aimed at absorbing knowledge, expertise, and production capacity from foreign partners. This technology acquisition strategy is vital for increasing national competitiveness, ultimately enabling the defense industry not only to meet domestic needs independently but also to effectively compete in the global defense market.

This discussion will systematically and thoroughly describe the main factors that empirically influence the competitiveness of the Indonesian defense industry. The analysis will focus on the fundamental role of innovation culture, which fosters an adaptive work environment, creativity, and acceptance of technological change; strategic planning, which guides the direction of industrial development with a long-term vision and efficient resource allocation; and technology acquisition, which serves as a critical bridge in mastering capabilities and enhancing competence. Additionally, the close relationship between these factors and the national defense budget will be elaborated, considering that budget availability and optimization are crucial instruments that directly facilitate or limit any efforts to strengthen the defense industry. Thus, it is hoped that a comprehensive and holistic understanding of the dynamics of defense industry competitiveness in Indonesia, along with relevant policy implications for the future, can

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be achieved.

Discussion on Innovation Culture in the Defense Industry

Innovation culture forms the fundamental work ethic and collective mindset within an organization. Essentially, it reflects internalized values, prevailing norms, and shared assumptions and beliefs that actively support the acceptance, exploration, and development of new technologies. In an industrial environment, such a culture fosters an atmosphere where fresh ideas are welcomed, experimentation is permitted, and learning from failures is considered part of the progress.

In the specific context of the defense industry, innovation culture plays an even more crucial and strategic role. This is due to the unique nature of the defense industry, which constantly demands technological superiority and adaptability to evolving threats. A strong innovation culture is a primary determinant of successful implementation of internal research and development (R&D) outcomes by the defense industry itself. Without a supportive culture, even advanced research findings might struggle to be transformed into tangible products or capabilities. Furthermore, this culture is vital in optimizing the results of technology acquisition from abroad. Technology acquisition is not merely a purchasing process; it's a complex effort to absorb, internalize, and adapt foreign technology to suit national needs and capabilities. A strong innovation culture will facilitate this absorption process, ensuring that acquired technology doesn't remain a dormant asset but is truly integrated and further developed.

A robust innovation culture in the defense industry will proactively encourage the exploration of new opportunities and knowledge, both from within and outside the organization. This sparks the creation of innovations relevant to dynamic defense needs, from improving alutsista performance and operational efficiency to developing revolutionary defense concepts. To build and maintain an effective innovation culture, several key elements must be considered and developed:

1. Innovative Leadership: Innovation must start from the top. Leaders in the defense industry must provide full support, a clear vision regarding the importance of innovation, and serve as role models in encouraging calculated risk-taking and out-of-the-box thinking.
2. Teamwork Supporting Creativity, Collaboration, and Idea Exchange: Innovation is often the result of synergy. The work environment must encourage teams to dare to experiment, collaborate cross-functionally, and openly share ideas and knowledge without fear of negative criticism.
3. Individuals with Innovation Capability: This includes the development of human resources who not only possess technical expertise but also a strong willingness to continuously learn new technologies, adapt to change, and have the courage to seek new challenges in creating defense solutions.
4. Adaptive, Flexible, and Responsive Organizational Environment to Change: Organizational structures, work processes, and internal policies must be designed

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to facilitate innovation, not hinder it. Organizations must be able to respond quickly to changes in the strategic environment and defense needs.

5. Openness to External Interaction: The defense industry cannot innovate alone. Openness to collaborate with external parties, such as research institutions, universities, technology start-ups, or even civilian industries, is crucial for enriching knowledge, accelerating technology transfer, and finding innovative solutions from various sources.

Empirical research results firmly underscore the significance of this innovation culture. It was found that innovation culture has a positive and significant influence on technology acquisition. This finding aligns with previous research by Liao et al. (2012), which showed that a culture supporting experimentation, organizational learning, and knowledge acquisition will substantially accelerate the internalization and mastery of new technologies. In other words, the stronger an organization's innovation culture, the more efficient and successful it will be in absorbing and integrating technology from various sources.

Furthermore, the research results also reveal that innovation culture has a positive and significant influence on defense industry competitiveness, both directly and indirectly through technology acquisition. Interestingly, the indirect influence mediated by technology acquisition is more dominant than its direct influence. This has important implications: a strong innovation culture intrinsically enhances competitiveness (e.g., through speed of adaptation and internal efficiency), but its greatest contribution to defense industry competitiveness comes precisely from its ability to effectively drive and facilitate the technology acquisition process. This successful technology acquisition, in turn, becomes the primary driver of increased defense industry competitiveness, both in terms of product capabilities, production efficiency, and the ability to meet specific user needs. This demonstrates that innovation culture is a key enabler for technology acquisition, which then becomes the main engine driving competitiveness within the defense industry ecosystem.

Strategic Planning

Strategic planning is a key management function, inseparable from efforts to develop and strengthen the defense industry's capabilities. This process involves a complex series of long-term oriented activities, fundamentally engaging the organization's top management. The planning process includes setting ambitious yet realistic organizational goals, formulating targeted strategies and policies to achieve those goals, and determining specific strategic programs. It also involves establishing effective methods to ensure that outlined strategies and policies can be consistently and successfully implemented.

Effective strategic planning is a critical success factor that directly impacts an organization's performance and competitive position, including the defense industry. The formulated strategy serves as an overarching roadmap, detailing how a company or industry positions itself to achieve competitive advantage amidst competition. To achieve this, several important dimensions must be focused on in strategic planning within the defense industry:

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1. Top Management Involvement: The success of strategic planning heavily relies on the commitment and leadership of top management. They are proactively involved in every stage of plan development, from vision formulation to priority setting. This involvement extends beyond merely providing direction; it also ensures the availability of adequate resources and facilitates strategy implementation across all organizational levels.
2. Resource Allocation: Good strategic planning includes determining the efficient and targeted allocation of funds, facilities, and infrastructure. This means identifying where the most strategic investments should be placed to support critical initiatives, such as research and development, modernization of production facilities, or technology acquisition programs, to achieve long-term goals.
3. Future Orientation: The defense industry operates in a highly dynamic environment. Threats constantly evolve, and technology advances rapidly. Strategic planning must have a strong focus on a long-term vision, the ability to anticipate changes in the strategic environment, and adaptability to future technological developments. This means thinking about the capabilities needed 5, 10, or even 20 years down the line.
4. External Environment: Strategic planning cannot be conducted purely internally. The defense industry must have the adaptive capability to adjust strategies based on careful analysis of external conditions. This includes a deep understanding of government policies (e.g., related to MEF, budget, and industrial self-reliance), global market dynamics for alutsista, geopolitical developments, and technological innovations from global competitors.

The results of this study provide strong empirical validation of the importance of strategic planning. It was found that strategic planning has a positive and significant influence on Technology Acquisition. This means that the better and more focused the strategic planning, especially concerning the provision of adequate funding, supportive facilities and infrastructure, and the establishment of appropriate strategic decisions related to technology, the more effectively the technology acquisition process can be enhanced and internalized by the defense industry. Mature planning becomes the foundation for planned, rather than reactive, technology acquisition efforts.

Technology Acquisition

Technology acquisition acts as a crucial bridge in strengthening the defense industry's capabilities. Mechanisms for technology acquisition include:

1. Internal R&D: Investing in independent research and development to create new technologies.
2. Technology Transfer from Abroad: Through various schemes such as offset, joint production, or joint development, aiming to absorb knowledge and expertise from foreign partners.

Examples of successful technology acquisition through technology transfer in alutsista (primary weapon systems) procurement can be seen in the following table:

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Table 2: Technology Transfer in Alutsista Procurement

ALUTSISTA (Primary Weapon System)	PROVIDER	RECIPIENT	REMARKS
Submarine	DSME, South Korea	PT. PAL	Joint Production, 2011-present
PKR Frigate	DSNS, Netherlands	PT. PAL	Joint Production, 2012-2015
MLRS Rocket	Avibras, Brazil	PT. Pindad	Joint Production, 2012-2017
Main Battle Tank	Rheinmetall, Germany	PT. Pindad	2013-2014
KFX/IFX Fighter Jet	South Korea	Kemhan & PT. DI	Joint Development, 2011-present

This table demonstrates a commitment to building defense industry capacity through international collaboration, which is expected to enhance technological mastery and production independence. Empirical research results prove that Technology Acquisition has a positive and significant influence on Defense Industry Competitiveness, with a direct influence contribution of 47.61%. This confirms that technology acquisition is a key factor that can improve industry competitiveness, particularly in terms of product quality, delivery time efficiency, and enhanced product utility.

Defense Budget and Competitiveness Opportunities

The defense budget plays a vital role in supporting the development of the defense industry. Indonesia's defense budget from 2010 to 2019 showed a significant upward trend:

Table 3: Indonesian Defense Budget FY 2010-2019

YEAR	BUDGET (billion IDR)
2010	42,392
2011	51,202
2012	61,305
2013	87,707
2014	82,217
2015	102,283
2016	98,100
2017	109,300
2018	105,875
2019	108,360

Despite the significant increase in the defense budget, the proportion of alutsista (primary weapon systems) procurement from abroad still dominates. Data indicates that between 2015 and 2019, alutsista procurement using Foreign Loans (PLN) reached IDR

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65 trillion, significantly higher than only IDR 15 trillion from Domestic Loans (PDN). This phenomenon suggests that, even with substantial funding, the domestic defense industry has not yet been able to fully meet domestic needs. Therefore, its competitiveness needs continuous improvement through technology acquisition efforts and strengthening internal capabilities.

Defense Industry Competitiveness

Defense industry competitiveness reflects a nation's ability to produce superior primary weapon systems (alutsista) and defense services, not only to meet domestic needs but also to compete in the global market. This competitiveness is measured through four interconnected key dimensions:

1. Cost: This dimension focuses on the efficiency of production costs to ensure that the price of alutsista products and services remains competitive. The defense industry must effectively manage raw material costs, manufacturing processes, logistics, and operational expenses. The goal is to offer high-quality products at competitive prices in both domestic and international markets, without compromising quality or strategic capability.
2. Quality: Quality refers to the industry's ability to produce alutsista products and services that not only meet but also exceed the technical specifications and functional needs of users (TNI - Indonesian Armed Forces). This dimension includes reliability, performance, durability, precision, and adherence to stringent military safety and operational standards. High quality builds user trust and enhances the industry's reputation.
3. Delivery: This dimension refers to the timeliness in delivering alutsista products and services according to agreed-upon schedules. In the defense sector, punctuality is crucial as it directly relates to military operational readiness and the fulfillment of MEF (Minimum Essential Force). Delivery delays can disrupt defense strategies and lead to significant losses.
4. Flexibility: Flexibility is the industry's ability to quickly adapt to changing user needs, new technological developments, and unforeseen market dynamics. A flexible industry can adjust production capacity, modify product designs, or develop new solutions in response to evolving threats or the latest technological innovations.

Building sustainable competitiveness in the defense industry is a long-term strategic endeavor. The defense industry must be able to meet several key prerequisites:

1. Develop alutsista products that align with TNI's unique specifications and needs. Products must be designed and produced to optimally support national defense doctrine and Indonesia's geographical conditions. Customization and relevance are key.
2. Accelerate the mastery of cutting-edge technology, through both internal R&D and external acquisition. Technological innovation is the main driver of competitiveness. The industry must invest in internal research and development to create technological advantages. External technology acquisition must also be

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conducted strategically, focusing on knowledge transfer and assimilation capabilities.

3. Increase participation in global supply chains to expand markets and capabilities. Involvement in the global defense industry ecosystem provides access to technology, new markets, and strategic partnerships. It also facilitates learning and improvement of quality standards.
4. Conduct strategic planning based on internal capabilities, while leveraging opportunities from the external environment. Planning must be realistic, considering internal strengths and weaknesses, yet also adaptive to opportunities and threats from the external environment. Planning must integrate innovation, technology acquisition, and market development holistically.

CONCLUSION

This research highlights the critical role of innovation culture and strategic planning in boosting the competitiveness of the Indonesian defense industry, primarily through the mediation of technology acquisition. Our findings confirm that a robust innovation culture positively and significantly influences technology acquisition, which in turn profoundly impacts the defense industry's competitiveness. Similarly, effective strategic planning positively and significantly contributes to technology acquisition, and while its direct effect on competitiveness isn't significant, its indirect influence via technology acquisition is crucial. Despite a growing defense budget, Indonesia's continued reliance on imported defense equipment underscores the need for enhanced domestic industry competitiveness. Therefore, fostering a strong innovation culture and strategic planning focused on technology acquisition is vital for achieving national defense industry self-reliance and competitiveness.

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