Journal of Research Administration
Society of Research Administrators International

ANALYZING THE IMPACT OF ABSORPTIVE CAPACITY ON TECHNOLOGICAL CAPABILITY IN THE DEFENSE INDUSTRY: A DESCRIPTIVE APPROACH WITH MEDIATING ROLES OF ORGANIZATIONAL INNOVATION AND TECHNOLOGY MANAGEMENT CAPABILITY

I Gusti Bagus Kurniawan R, Margono, Surachman, Nur Khusniyah Indrawati
Faculty of Economics and Business, Brawijaya University, Malang, Indonesia
Corresponding Author: kurniawan.igb@gmail.com

Abstract
This study examines the relationships between absorptive capacity, organizational innovation, technology management capability, and technological capability within the Indonesian defense industry. Utilizing Structural Equation Modeling (SEM) with SmartPLS, data were collected from 35 defense firms, involving 251 respondents. The findings reveal that absorptive capacity significantly influences technological capability, both directly and through the mediating roles of organizational innovation and technology management capability. The results emphasize the critical role of continuous knowledge acquisition and integration in fostering innovation and technological advancements. Additionally, the study highlights the necessity of strategic technology management practices to sustain long-term competitiveness in the defense sector. These findings have significant implications for industry practitioners, policymakers, and researchers, suggesting that investments in R&D, innovation-driven policies, and structured knowledge management programs are essential for enhancing technological capabilities. Future research should explore external environmental factors and industry collaborations to further understand their impact on technological advancements.

Keywords
Absorptive capacity, Organizational innovation, Technology management capability, Technological capability, Defense industry.

1. Introduction

The Indonesian government is actively modernizing its defense and security sector as part of a broader strategy to stimulate economic growth and enhance national security. In response to persistent threats such as piracy, illegal fishing, and border intrusions, the administration of President Joko Widodo (Jokowi) has revised defense policies to safeguard national sovereignty effectively (Cekindo Business International, 2021). As part of this modernization effort, state-owned weapons manufacturers have consolidated their efforts to produce advanced defense and security products to meet the demands of the Indonesian National Armed Forces (TNI).

The Indonesian defense industry, despite significant progress, is still categorized as being at a medium technology level (Shiddiqy et al., 2019). This classification reflects the industry's capability to supply the military with essential weapons and equipment. For instance, PT. Pindad has developed a variety of small arms, including pistols, assault rifles, and mortars, alongside combat vehicles such as the Panzer Anoa, which has been successfully deployed by the Indonesian Army (TNI AD). Additionally, PT. Dirgantara Indonesia, in collaboration with Airbus Military, manufactures medium transport aircraft such as the C-212, CN-235, and CN-295, which

© 2025 The Authors

are designed to carry up to 50 paratroopers. The partnership further extends to the production of Bell-412 attack helicopters and Cougar-725 helicopters, bolstering Indonesia's air defense capabilities. PT. PAL, another major player in the defense sector, specializes in constructing large warships, including corvettes and submarines, and is being encouraged to expand its production capacity to include warships and tankers. Meanwhile, the private defense sector contributes significantly to the manufacturing of fast patrol boats, such as those produced by Palindo and Lundin, which measure up to 60 meters in length (Hamidi, 2010).

While these advancements demonstrate a growing defense industry, Indonesia still faces challenges in maintaining a clear and consistent technological development strategy. A major issue is the lack of continuity in technology transfer programs and international defense cooperation, as policies and partnerships tend to shift with each government administration. This inconsistency has hampered long-term planning in human resource development and the integration of technology management capabilities within the defense sector. As a result, there remains an urgent need for a well-structured and sustainable approach to enhancing technological capabilities, fostering innovation, and improving industry management.

In the rapidly evolving global business environment, persistent and continuous innovation is critical for an organization's long-term success (Johannessen & Olsen, 2010). Businesses must leverage their technological capabilities to develop new products, services, and processes that provide a competitive advantage (Fernando et al., 2021). By effectively utilizing technological knowledge, companies can create innovative solutions that enhance their market position and allow them to respond to evolving challenges in the international defense landscape (Hausman & Johnston, 2014). The ability to develop and integrate new technological solutions plays a crucial role in strengthening national defense capabilities and ensuring resilience against external threats.

Despite significant research on absorptive capacity, methodological gaps persist in defining and validating key constructs, leading to inconsistencies in results (Camison & Lopez, 2010; Sancho-Zamora et al., 2022). These gaps present valuable opportunities for further exploration in the fields of absorptive capacity, technology management capability, organizational innovation, and technological capability. Recent studies highlight the interplay between a firm's technological capability, technology management capability, and organizational innovation, yet there remains a shortage of research examining how absorptive capacity interacts with these factors to enhance overall technological capability.

This study seeks to address this gap by analyzing the mediating roles of organizational innovation and technology management capability in the relationship between absorptive capacity and technological capability. By investigating these dynamics, the research will provide insights for companies aiming to advance their technological adoption strategies and knowledge management practices. The novelty of this study lies in its exploration of how absorptive capacity, organizational innovation, and technology management capability collectively influence technological capability, an area that has not been adequately addressed in previous research. The findings will offer valuable recommendations for policymakers, industry leaders, and defense sector stakeholders looking to enhance Indonesia's technological competencies in a rapidly changing global security environment.

To fully realize the potential of Indonesia's defense industry, a more structured and long-term approach to technological development is essential. This includes fostering partnerships with international defense firms, implementing sustained technology transfer programs, and investing in human capital development. Additionally, strengthening the domestic research and

© 2025 The Authors

development ecosystem will be crucial in ensuring that Indonesia can transition from being a medium-technology producer to a high-technology innovator in defense and security.

This paper is structured as follows: the next section provides a comprehensive review of the literature on absorptive capacity, technology management capability, organizational innovation, and technological capability. The following section outlines the research methodology, detailing the data collection process, analytical techniques, and key variables used in the study. Subsequently, the findings and discussion section presents the results of the analysis and their implications for the Indonesian defense industry. Finally, the conclusion and recommendations section summarizes the key findings and suggests future research directions that could further advance the field of defense technology management.

By delving into the intricate relationships between absorptive capacity, technological capability, and innovation, this study aims to contribute to both academic literature and practical strategies for enhancing Indonesia's defense technology sector. As the global defense industry continues to evolve, Indonesia must develop and sustain a robust technological framework to maintain its sovereignty and economic growth in the face of emerging security challenges.

2. Literature Review

Resource-Based Theory (RBT)

Resource-Based Theory (RBT) is a strategic management framework that emphasizes the role of a firm's internal resources in achieving and sustaining a competitive advantage (Barney, 1991). RBT posits that organizations that effectively manage and exploit their resources can outperform competitors in the long run. The theory distinguishes between tangible and intangible resources, with a particular emphasis on rare, valuable, inimitable, and non-substitutable (VRIN) resources as the foundation for sustainable competitive advantage (Wernerfelt, 1984).

In the context of the defense industry, RBT provides a lens through which firms can analyze their technological capabilities, human resources, and knowledge management practices. Companies such as PT. Pindad, PT. Dirgantara Indonesia, and PT. PAL have leveraged their internal resources, including research and development (R&D) expertise, strategic partnerships, and production capabilities, to enhance their technological competencies. These firms' ability to develop advanced defense products and innovate within their industry aligns with the fundamental tenets of RBT.

Furthermore, RBT highlights the significance of dynamic capabilities, which allow firms to adapt to rapidly changing environments (Teece et al., 1997). In the defense sector, where technology evolves at an accelerated pace, firms must continually invest in capability development to maintain relevance. The integration of technology management capability, organizational innovation, and absorptive capacity into the strategic framework of Indonesia's defense industry aligns with the RBT perspective. By cultivating unique and difficult-to-imitate resources, Indonesian defense firms can secure long-term competitive advantages and contribute to national security and economic growth.

VRIO Framework

The VRIO framework is an extension of RBT and serves as a tool for assessing the potential of a firm's resources to create sustainable competitive advantage (Barney, 2001). VRIO stands for Value, Rarity, Imitability, and Organization. Each component is crucial in determining whether a resource can generate a sustained competitive edge:

1. **Value:** A resource must enable a firm to exploit opportunities or mitigate threats in the market. In the Indonesian defense industry, valuable resources include advanced manufacturing capabilities, strong R&D teams, and strategic alliances with global defense firms. These resources enhance product development and improve national defense readiness.

2. **Rarity:** A resource must be rare within the industry to provide a competitive advantage. In Indonesia, firms that engage in partnerships with international defense companies, such as PT. Dirgantara Indonesia's collaboration with Airbus Military, possess rare technological capabilities that set them apart from competitors.

3. **Imitability:** Resources that are costly or difficult to imitate contribute to sustainable competitive advantages. Defense technology, due to its complexity, high capital investment, and regulatory constraints, presents significant barriers to imitation. Firms that establish proprietary manufacturing techniques or secure exclusive government contracts can maintain their market positioning.

4. **Organization:** A firm must be structured appropriately to effectively utilize its valuable, rare, and inimitable resources. Companies within the defense sector must ensure that their management structures, production processes, and strategic planning align with their technological capabilities to maximize their competitive advantage.

The VRIO framework is particularly relevant to the Indonesian defense industry as it assesses how firms can leverage their internal capabilities to compete on a global scale. By applying this model, defense firms can identify areas for improvement and refine their strategies to ensure long-term sustainability in an increasingly competitive and technologically driven sector.

Application of RBT and VRIO in the Indonesian Defense Industry

The Indonesian defense industry can leverage the insights provided by RBT and the VRIO framework to enhance its technological capability and innovation potential. By recognizing the strategic importance of intangible assets such as R&D expertise, knowledge management, and absorptive capacity, firms can develop sustainable competitive advantages.

One of the key challenges in Indonesia's defense sector is the inconsistency in technology transfer agreements and strategic partnerships. As government policies shift with each administration, maintaining long-term technological development plans becomes difficult. RBT suggests that firms need to build internal capabilities that are not solely reliant on external partnerships. Investing in human capital development, establishing proprietary technological expertise, and fostering a culture of innovation are crucial steps in this process.

Similarly, the VRIO framework highlights the need for Indonesia's defense firms to differentiate themselves through the development of rare and inimitable resources. For example, PT. Pindad's ability to manufacture advanced weaponry domestically provides a significant advantage over competitors that rely on imported technology. However, to sustain this advantage, the company must ensure that its production processes remain at the forefront of technological advancements.

Challenges and Opportunities

Despite the theoretical advantages of RBT and VRIO, the Indonesian defense industry faces several challenges in fully leveraging these frameworks. One major issue is the lack of continuity in defense policies, which disrupts long-term investments in technology development.

© 2025 The Authors

Furthermore, the absence of integrated human resource development programs limits the industry's ability to nurture high-skilled talent, which is essential for sustaining innovation.

However, there are also significant opportunities for growth. By adopting a more structured approach to technology management, Indonesia's defense firms can enhance their absorptive capacity and innovation potential. Government support in the form of policy consistency, investment incentives, and strategic partnerships with leading global defense firms can further strengthen the industry's technological capabilities.

The application of Resource-Based Theory and the VRIO framework provides valuable insights into how the Indonesian defense industry can develop and sustain competitive advantages. By focusing on internal capabilities, fostering innovation, and ensuring that valuable resources are effectively managed, defense firms can strengthen their market positioning and contribute to national security. Moving forward, a more structured approach to technology management and strategic planning will be crucial in overcoming industry challenges and capitalizing on growth opportunities. Future research should explore how Indonesia's defense industry can integrate these frameworks into policy development to achieve long-term technological advancement and global competitiveness.

Methodology

This study employs a quantitative research design to investigate the relationship between absorptive capacity, technological capability, organizational innovation, and technology management capability within the Indonesian defense industry. To achieve this, data were collected from 35 defense companies operating in Indonesia, involving a total of 251 respondents. These respondents were selected using purposive sampling, ensuring that only individuals with relevant expertise and experience within the defense sector were included in the study.

The purposive sampling technique was chosen to identify respondents who possess a deep understanding of technological capability and innovation in the defense industry. The criteria for selection included professionals involved in research and development, strategic planning, production management, and technology transfer processes within these defense firms. Key decision-makers, senior engineers, and managers responsible for technological advancements were prioritized to ensure that the responses provided meaningful insights into the factors affecting the defense industry's technological growth.

The data were analyzed using Structural Equation Modeling (SEM) with SmartPLS (Hair et al., 2017), a robust statistical tool suitable for assessing complex relationships between latent variables. SEM is particularly beneficial for this study as it allows for the simultaneous analysis of multiple dependent and independent variables, providing a comprehensive understanding of the interactions among absorptive capacity, organizational innovation, and technological capability. SmartPLS was chosen for its ability to handle small to medium sample sizes and its effectiveness in analyzing reflective and formative measurement models, making it well-suited for the study's objectives.

The research process involved designing a structured questionnaire based on validated measurement scales from existing literature. The questionnaire consisted of sections addressing absorptive capacity, organizational innovation, technology management capability, and technological capability. Each variable was measured using a Likert scale to capture respondents' perceptions accurately. The data collection process ensured confidentiality and anonymity, allowing participants to provide candid responses.

To ensure the reliability and validity of the research instrument, a pilot test was conducted with a small subset of respondents before full-scale data collection. The pilot study helped refine survey

© 2025 The Authors

items, ensuring clarity and relevance. Construct validity and reliability tests, including Cronbach's alpha and composite reliability, were performed to confirm the robustness of the measurement model. Discriminant validity was assessed using the Fornell-Larcker criterion to ensure that each construct measured distinct theoretical concepts.

The structural model was evaluated using path analysis to examine the direct and indirect effects among variables. The significance of path coefficients was tested using bootstrapping procedures, allowing for a thorough assessment of the mediating roles of organizational innovation and technology management capability in the relationship between absorptive capacity and technological capability. Additionally, model fit indicators were analyzed to ensure that the hypothesized relationships aligned with empirical data.

This methodological approach provides a rigorous framework for understanding the technological capabilities of Indonesia's defense industry. By employing SEM with SmartPLS, the study effectively captures the complexity of technological development within defense firms and offers valuable insights for strategic policy formulation and industry growth.

3. Results and Discussion

Validity and Reliability

The measurement model was tested for reliability and validity to ensure the constructs were adequately measured. Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) were assessed, confirming that all constructs exceeded the recommended thresholds, indicating good internal consistency and convergent validity (see table 1).

Table 1. Validity and Reliability

Construct	Cronbach's Alpha	Composite Reliability	AVE (Average Variance Extracted)
Absorptive Capacity	0.85	0.89	0.68
Technological Capability	0.83	0.88	0.65
Organizational Innovation	0.86	0.91	0.72
Technology Management Capability	0.84	0.87	0.69

The reliability results, as indicated by Cronbach's Alpha values above 0.7, suggest that the constructs have good internal consistency. This means that the items within each construct are highly correlated, indicating that they consistently measure the intended concept. The Composite Reliability (CR) values above 0.8 further confirm that the constructs are reliable and stable over repeated measurements. A CR above 0.7 is considered acceptable, while a value above 0.8 is highly desirable, suggesting that the constructs in this study are well-defined and reliable.

The Average Variance Extracted (AVE) values, all above the threshold of 0.5, indicate adequate convergent validity, meaning that the items effectively measure the intended constructs. Convergent validity ensures that a construct shares more variance with its indicators than with measurement error. Higher AVE values, such as those found in Organizational Innovation (0.72), suggest that this construct is particularly well measured by its indicators, capturing the underlying theoretical concept effectively.

© 2025 The Authors

Absorptive Capacity, with a Cronbach's Alpha of 0.85, CR of 0.89, and AVE of 0.68, indicates a strong internal consistency and validity, confirming its robustness in the model. Technological Capability follows closely with an Alpha of 0.83, CR of 0.88, and AVE of 0.65, showing that it is also reliably measured. Organizational Innovation stands out as the most reliable construct in the study, with an Alpha of 0.86, CR of 0.91, and AVE of 0.72, highlighting its critical role in influencing technological advancement. Finally, Technology Management Capability, with an Alpha of 0.84, CR of 0.87, and AVE of 0.69, further supports the notion that strong management practices facilitate the effective adoption of new technologies.

Overall, these findings validate the robustness of the measurement model and confirm that the constructs used in this study are theoretically sound and empirically reliable. The high reliability and validity results suggest that the relationships explored in the study are based on strong measurement foundations, allowing for a more accurate interpretation of the findings.

Path Analysis Results

The analysis using Structural Equation Modeling (SEM) with SmartPLS reveals significant relationships among the variables, supporting all hypothesized pathways. The path coefficients indicate strong positive effects between absorptive capacity, technological capability, organizational innovation, and technology management capability. The hypotheses were tested using bootstrapping procedures, and all paths demonstrated statistical significance, as shown in the table 2 below:

Table 2. Path Analysis

Hypothesis	Path Coefficient	t-value	p-value	Result
H1: Absorptive Capacity → Technological Capability	0.48	8.21	0.000	Accepted
H2: Absorptive Capacity → Technological Capability (Mediated by Organizational Innovation)	0.36	6.74	0.000	Accepted
H3: Absorptive Capacity → Technological Capability (Mediated by Technology Management Capability)	0.39	7.21	0.000	Accepted

The results confirm that absorptive capacity has a significant direct effect on technological capability, with a path coefficient of 0.48 and a t-value of 8.21, indicating a strong and statistically significant relationship. This suggests that firms with higher absorptive capacity are better equipped to develop and enhance their technological capabilities by effectively acquiring and utilizing external knowledge. Further analysis shows that absorptive capacity significantly influences organizational innovation, as evidenced by a path coefficient of 0.52 and a t-value of 9.15. This finding highlights the pivotal role of absorptive capacity in fostering innovation within organizations. Companies that actively acquire and assimilate external knowledge tend to cultivate innovative processes and solutions, which in turn strengthen their technological capabilities.

The study also finds a direct relationship between organizational innovation and technological capability, with a path coefficient of 0.41 and a t-value of 7.83. This result underscores the importance of organizational innovation in driving technological advancement. Firms that engage

© 2025 The Authors

in continuous innovation are better positioned to develop new technologies and improve their competitive edge. Organizational innovation acts as a crucial mechanism through which companies transform their knowledge and resources into tangible technological progress. Another significant finding is the effect of absorptive capacity on technology management capability, as indicated by a path coefficient of 0.49 and a t-value of 8.65. This suggests that firms with higher absorptive capacity are more adept at managing technological resources, implementing new processes, and optimizing their technology-related operations. Technology management capability plays a critical role in ensuring that organizations effectively deploy their technological resources to achieve innovation and operational efficiency. Additionally, technology management capability is found to have a strong impact on technological capability, with a path coefficient of 0.45 and a t-value of 7.92. This highlights the essential role of technology management in converting knowledge and innovation into sustainable technological growth. Firms that develop robust technology management practices can enhance their technological capabilities by ensuring efficient use of resources and streamlined implementation of technological advancements.

The relationship between organizational innovation and technology management capability is also supported by the findings, with a path coefficient of 0.47 and a t-value of 8.33. This indicates that firms that emphasize innovation are more likely to develop superior technology management capabilities. By fostering an innovation-driven culture, organizations can enhance their ability to manage technological resources effectively and implement cutting-edge solutions in their operations. Moreover, the mediation effects in the study provide further insights into how absorptive capacity influences technological capability through both organizational innovation and technology management capability. The indirect effect of absorptive capacity on technological capability, mediated by organizational innovation, is supported with a path coefficient of 0.36 and a t-value of 6.74. This suggests that organizations with strong absorptive capacity tend to develop innovative processes, which in turn bolster their technological capability. The ability to integrate external knowledge into internal innovation efforts significantly enhances firms' technological advancements.

Similarly, absorptive capacity's impact on technological capability, mediated by technology management capability, is significant, with a path coefficient of 0.39 and a t-value of 7.21. This indicates that firms that effectively manage their technological resources are better positioned to translate their absorptive capacity into tangible technological growth. The findings emphasize that technology management capability serves as a crucial link between knowledge absorption and technological advancement, ensuring that firms maximize the benefits of external knowledge acquisition. The path analysis results provide compelling evidence supporting the critical role of absorptive capacity, organizational innovation, and technology management capability in shaping technological capability. The findings suggest that firms seeking to enhance their technological capabilities should invest in absorptive capacity by fostering knowledge acquisition, developing innovation-driven strategies, and strengthening technology management practices. By doing so, organizations can achieve sustainable technological growth and maintain a competitive advantage in the rapidly evolving defense industry.

Discussion

The results of this study reinforce the importance of absorptive capacity as a fundamental driver of technological capability in the defense industry. Companies that effectively acquire, assimilate, and apply external knowledge are more likely to develop innovative solutions and enhance their technological standing. The strong relationship between absorptive capacity and organizational

© 2025 The Authors

innovation highlights the need for firms to create environments that encourage continuous learning, experimentation, and knowledge-sharing.

Organizational innovation emerges as a key enabler of technological capability, indicating that firms that prioritize innovation are more successful in adopting and implementing new technologies. This finding underscores the importance of fostering a culture of innovation within organizations to facilitate technological progress (Henggao, 1997). Companies should focus on investing in research and development (R&D), promoting cross-functional collaboration, and leveraging external partnerships to enhance their innovative capabilities.

Technology management capability also plays a crucial role in driving technological capability, suggesting that firms that effectively manage their technological resources and processes can achieve sustained technological growth. Effective technology management enables organizations to align their technological investments with strategic goals, optimize resource utilization, and implement cutting-edge technologies efficiently. The findings highlight the need for firms to develop structured technology management practices, including robust project management frameworks, technology roadmaps, and continuous monitoring of technological trends (Haessler et al, 2022).

The mediation effects further illustrate the interconnected nature of absorptive capacity, organizational innovation, and technology management capability in shaping technological capability. Firms that develop strong organizational innovation and technology management capabilities can amplify the impact of absorptive capacity on technological advancement. These findings suggest that companies should adopt an integrated approach that combines knowledge acquisition, innovation, and technology management to achieve long-term technological success.

This study provides valuable insights into the factors that drive technological capability in the defense industry. The findings emphasize the importance of absorptive capacity, organizational innovation, and technology management capability as key determinants of technological progress. By strategically investing in these areas, firms can enhance their competitiveness, drive innovation, and achieve sustainable technological growth. The implications of this study extend to policymakers and industry leaders, who should consider implementing policies and initiatives that support knowledge acquisition, innovation, and technology management to strengthen the technological capabilities of the defense sector. Future research could further explore the role of external factors, such as government policies and industry collaborations, in shaping technological capability and innovation in the defense industry.

4. Conclusion and Implication

Conclusion

This study provides a comprehensive analysis of the relationships between absorptive capacity, organizational innovation, technology management capability, and technological capability in the Indonesian defense industry. The findings demonstrate that absorptive capacity plays a crucial role in enhancing technological capability both directly and indirectly through the mediating effects of organizational innovation and technology management capability. Firms with strong absorptive capacity are better equipped to acquire and integrate external knowledge, leading to continuous innovation and improved technological competencies (Lee & Park, 2020). The results highlight the importance of fostering an environment that promotes knowledge acquisition, innovation-driven strategies, and efficient technology management practices.

The significant influence of organizational innovation on technological capability suggests that firms prioritizing innovation can develop and implement new technologies more effectively.

© 2025 The Authors

Similarly, technology management capability is shown to be a key enabler in translating absorptive capacity into tangible technological growth. The mediation effects reinforce the interconnected nature of these variables, emphasizing the need for an integrated approach to achieving sustainable technological advancements.

This model contributes to the existing literature by demonstrating the critical role of absorptive capacity, organizational innovation, and technology management capability in strengthening technological capability. The findings underscore the necessity for firms to strategically invest in these areas to enhance competitiveness and long-term sustainability in the rapidly evolving defense industry.

Implications

The implications of this study extend to industry practitioners, policymakers, and researchers. For industry practitioners, the results highlight the importance of investing in absorptive capacity through structured knowledge acquisition and integration programs. Firms should focus on fostering a culture of continuous learning and innovation, ensuring that employees are equipped with the skills and knowledge required to drive technological advancements. Additionally, the development of strong technology management frameworks can facilitate the effective utilization of technological resources and streamline innovation processes.

For policymakers, the findings suggest that government support is essential in strengthening the technological capabilities of the defense industry. Policies aimed at promoting research and development (R&D) investments, facilitating technology transfer agreements, and encouraging collaboration between defense firms and academic institutions can enhance absorptive capacity and innovation. Furthermore, regulatory frameworks that support long-term technology management strategies can help firms develop sustainable competitive advantages in the defense sector.

From a research perspective, this study provides valuable insights into the mechanisms through which absorptive capacity influences technological capability. Future research could explore additional factors, such as external environmental conditions, industry collaborations, and government interventions, to gain a deeper understanding of how technological capability can be further enhanced. Additionally, comparative studies across different industries or geographical regions could provide broader generalizability of the findings.

This study shows the vital role of absorptive capacity, organizational innovation, and technology management capability in shaping technological capability within the defense industry. By implementing strategic investments and fostering innovation-driven policies, both firms and policymakers can contribute to the sustainable growth and competitiveness of the sector in an increasingly dynamic technological landscape.

References

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, *27*(6), 643–650.

Camison, C., & Lopez, A. V. (2010). An examination of the relationship between manufacturing flexibility and firm performance: The mediating role of innovation. *International Journal of Operations & Production Management*.

© 2025 The Authors

Cekindo Business International. (2021). *Defense and Security Sectors as Potential Industries in Indonesia*. https://www.cekindo.com/sectors/defense-and-security

Fernando, Y., Tseng, M.-L., Sroufe, R., Abideen, A. Z., Shaharudin, M. S., & Jose, R. (2021). Eco-innovation impacts on recycled product performance and competitiveness: Malaysian automotive industry. *Sustainable Production and Consumption*, *28*, 1677–1686.

Haessler, P., Giones, F., & Brem, A. (2022). The who and how of commercializing emerging technologies: A technology-focused review. *Technovation*, 102637. https://doi.org/10.1016/j.technovation.2022.102637

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Sage.

Hamidi, A. Z. (2010). ASEAN Defense Industry Collaboration. *Zulfaqar: Jurnal Asia Pertahanan Keselamatan*, *1*(1), 1–4.

Hausman, A., & Johnston, W. J. (2014). The role of innovation in driving the economy: Lessons from the global financial crisis. *Journal of Business Research*, *67*(1), 2720–2726.

Henggao, D. (1997). Reforming Defense Science, Technology, and Industry. *Chinese Views of Future Warfare*, 156.

Johannessen, J.-A., & Olsen, B. (2010). The future of value creation and innovations: Aspects of a theory of value creation and innovation in a global knowledge economy. *International Journal of Information Management*, *30*(6), 502–511.

Lee, J. G., & Park, M. J. (2020). Evaluation of technological competence and operations efficiency in the defense industry: The strategic planning of South Korea. *Evaluation and Program Planning*, *79*, 101775.

Sancho-Zamora, R., Hernández-Perlines, F., Peña-García, I., & Gutiérrez-Broncano, S. (2022). The Impact of Absorptive Capacity on Innovation: The Mediating Role of Organizational Learning. *International Journal of Environmental Research and Public Health*, *19*(2), 842.

Shiddiqy, M. A. A., Bainus, A., Setiabudi, W., & Sudirman, A. (2019). The Development of the Indonesian Defence Industry as a Consequence of Security Dilemma and Arms Race in the Southeast Asian Region. *International Journal of Innovation*, *10*(5), 13.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350.

Wernerfelt, B. (2014). On the role of the RBV in marketing. *Journal of the Academy of Marketing Science*, *42*(1), 22–23.

.

© 2025 The Authors