



Strategic Utilization of Demographic Dividend to Build Resilient Defense Capabilities in Emerging Economies

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ABSTRACT

The purpose of this study is to analyze the Strategic Utilization of Demographic Dividends to Build Resilient Defense Capabilities in Developing Countries. The method used is Systematic Literature Review (SLR). The results show that to take advantage of the demographic dividend for defense, developing countries should focus on several key strategies. First, investing in education, particularly in STEM fields, is critical to building a skilled workforce for both the economic and defense sectors (Bloom et al., 2003). Managing the youth bulge by integrating young people into productive roles, including defense-related sectors such as cybersecurity and military technology, can help drive national security. Encouraging technological innovation through public-private partnerships will further strengthen defense capabilities. In addition, addressing the aging population by modernizing military infrastructure and increasing automation is critical for long-term defence readiness.

INTRODUCTION

Demographic dividend refers to the economic growth potential that arises from shifts in a population's age structure, primarily when the working-age population grows larger than the non-working-age segments. Emerging economies, such as Indonesia, India, and many African nations, are experiencing a demographic shift where a significant proportion of their population enters the workforce. This shift presents a unique opportunity to leverage this dividend to strengthen various sectors, including national defense. For emerging economies, where defense capabilities often lag behind global powers, this demographic advantage can be strategically employed to enhance resilience and ensure long-term stability (Becker, 1964). The main issue in this study is that developing countries face a major challenge in strengthening their defense capabilities. Many of these countries face increasingly complex threats, including non-traditional security threats such as terrorism, transnational crime, and regional tensions. However, their ability to respond to these threats is often limited by low military budgets, lack of defense infrastructure, and weaknesses in technology and intelligence (Bloom, D. E., Canning, D., & Sevilla, 2003).

For example, Indonesia, with more than 270 million people, has enjoyed steady economic growth in the past two decades, partly due to a booming productive population. Based on data from the Central Statistics Agency (BPS), in 2020, around 70% of Indonesia's population is in productive age (15-64 years old). However, despite this, Indonesia's defense capabilities are still faced with various limitations. Indonesia's defense budget in 2023 is only about 0.7% of GDP, which is below the global average of about 2% of GDP for the military sector. This condition delays the development of defense systems, military training, and the renewal of the main tools of the weapon system (*alutsista*) (Torres, E., & de Leon, 2021). In addition, according to a report by the Stockholm International Peace Research Institute (SIPRI), defense spending in developing countries such as Nigeria, Kenya, and India is still limited compared to major powers such as the United States or China. Given the fiscal pressures, the government's priorities are allocated more to poverty alleviation, infrastructure development, and health services than to increase the military budget (Aksu, D., et al., 2020).

This condition shows that although many developing countries have demographic bonuses, this potential has not been strategically utilized to strengthen their defense capabilities. In addition to budget constraints, another challenge is optimal human resource (HR) management, considering that the increase in the number of labor force is not always in line with the improvement of skills or education relevant for the defense sector (Cuaresma, J. C., et al., 2020). In the midst of various limitations faced by developing countries, the potential of the demographic bonus can be strategically utilized to build strong defense resilience. Some important steps that can be taken include improving education and training for defense human resources (HR). One of the main challenges is the low level of defense-related skills and education, so investment in military education and training is essential. Countries such as South Korea and Israel have successfully capitalized on demographic bonuses with conscription programs

that not only improve defense capabilities, but also youth tech skills, which are then used in the industrial sector. This approach is also relevant for developing countries, especially in improving cyber-defense skills and military technologies that can reduce dependence on military equipment imports (Gribble, J. N., & Bremner, 2012).

In addition, increased investment in defense technology is a crucial step. The strengthening of the domestic defense industry, including in the development of artificial intelligence (AI), cybersecurity, and advanced weapon systems, can be supported by an educated workforce as a result of the demographic bonus. For example, India, through the Make in India program, utilizes skilled local labor to encourage domestic military equipment production (Jackson, 2021). The mobilization of reserve components and territorial defense is also an important strategy, especially for countries with regular military budget constraints. Harnessing a young workforce through territorial defense units can strengthen national defense without burdening the budget. In Indonesia, the concept of the Reserve and Regional Defense Component is a clear example of how productive forces can support national defense forces (Jones, P., et al., 2018).

International cooperation in military training is also indispensable to accelerate the development of defense capabilities. Developing countries such as Indonesia, Pakistan, and Nigeria have established partnerships with developed countries through military training programs and technology transfer to cover gaps in technical knowledge and advanced military strategies (Leahy, E., et al., 2010). No less important is the welfare policy that supports the productive workforce. Health, social security, and housing policies for young people involved in defense are important to maintain long-term national stability. With decent welfare, a productive workforce in the defense sector can continue to make maximum contributions (Lee, R., & Mason., 2010).

According to the World Bank's predictions, by 2030 countries in Asia and Africa, such as Nigeria, will have the highest productive age populations. This is a great opportunity for these countries to strengthen their defenses by utilizing a productive workforce through training and development programs. Indonesia, with its large productive age population, also has the same opportunity through strengthening the domestic defense industry and international cooperation (Lopez, C., & Yoon, 2020). Harnessing demographic bonuses to build resilient defense resilience in developing countries requires a comprehensive approach. Education, training, technology investment, welfare policies, and cross-sectoral cooperation are key factors in ensuring that these countries are able to maintain their sovereignty and be ready to face future threats.

LITERATURE REVIEW

Demographic Dividend Theory

This theory explains how changes in the age structure of a population, specifically an increase in the working-age population relative to dependents, can create economic and strategic opportunities. As fertility rates decline and a larger proportion of the population becomes economically productive, countries can experience a boost in economic growth. In defense contexts, this growing workforce offers opportunities for expanding military personnel, enhancing defense industries, and leveraging technological advancements in national security efforts (Bloom et al., 2003). Emerging economies with large youth populations can strategically harness this dividend by investing in defense-related education and skills training.

Human Capital Theory

First proposed by Schultz (1961) and Becker (1964), this theory posits that investments in education, skills, and health enhance the productivity of individuals. In the context of defense, human capital development is critical for building a technologically adept and versatile military force. By focusing on education and training in areas such as cybersecurity, artificial intelligence, and military technologies, countries can enhance their defense capabilities. Countries like South Korea and Israel have successfully applied this theory by integrating mandatory military service with advanced technological training (Becker, 1964).

Defense Modernization Theory

This theory relates to the transformation of military forces through technology and organizational innovation. Emerging economies, by investing in the defense sector and integrating demographic advantages, can modernize their forces, reducing reliance on foreign military equipment and improving national security (Buzan & Herring, 1998). Defense modernization involves utilizing skilled labor from the demographic dividend to build a domestic defense industry, enhance cybersecurity, and improve military infrastructure.

METHODOLOGY

This study uses the Systematic Literature Review (SLR) method to identify, evaluate, and integrate previous studies that are relevant to the strategy of utilizing the demographic bonus in building resilient defense capabilities in developing countries. The SLR method is carried out through several systematic stages, namely the formulation of research questions, the development of review protocols, literature search, selection of relevant studies, data extraction, and data synthesis. This method aims to gain a comprehensive understanding of the key issues related to the utilization of demographic bonuses and how developing countries can improve defense resilience through investment in human resources, technology, and domestic defense industries.

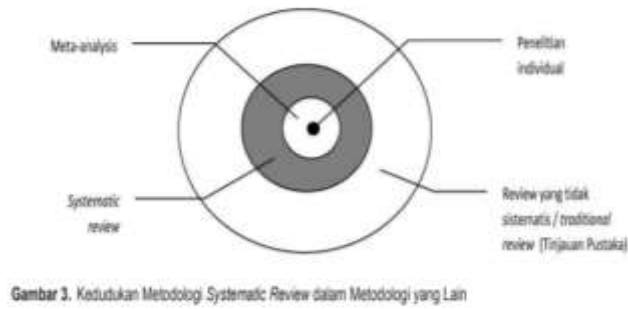


Figure. 1 SLR Systematic
Journal Source : (Siswanto, 2010)

A Systematic Literature Review is a research method to identify, evaluate, and combine all previous research that is relevant to this research topic. In this context, SLR is used to answer research questions through the analysis of study results collected from Google Scholar, Mendeley, and Publish or Perish which are indexed nationally and internationally. The analysis process is carried out systematically to compile data. There are several stages in determining a qualitative literature review, namely: formulating research questions, searching for literature, selecting articles, analyzing qualitative findings, implementing quality control, and compiling a final report. This literature review is very useful for synthesizing relevant previous research, so that the results of the research can provide comprehensive and balanced input to policymakers (Siswanto, 2010).

Systematic Literature Review

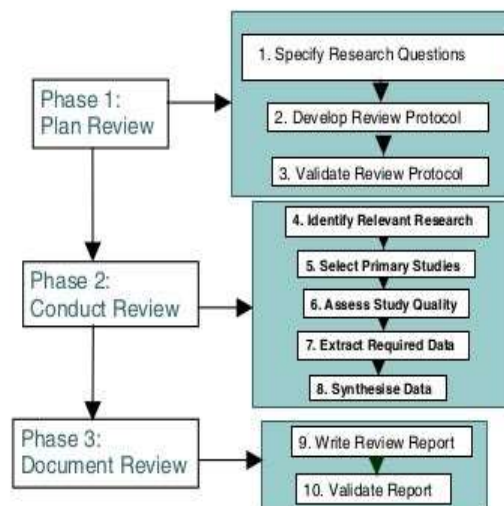


Fig. 1. Systematic literature review process.

Figure.2 SLR Process
Journal Source : (Siswanto, 2010)

Stages of Data Collection in SLR

This research is designed to answer strategic issues related to the use of demographic bonuses in the development of defense forces in developing countries. The first step in data collection is to conduct a systematic literature search through reliable sources such as Google Scholar and ResearchGate. Keywords used in the search include "demographic bonus," "defense strength," and "human resource development." Journal articles that are indexed nationally and internationally are a priority to ensure the quality of the data collected. Literature selection and screening are carried out based on relevance to the research question and the quality of the methodology used.

The final stage involves data analysis and synthesis to identify key themes related to defense strengthening through the use of demographic bonuses. This data is then summarized to develop strategic recommendations that support efforts to improve defense resilience in developing countries, with the aim of providing evidence-based input to policymakers. The process of searching for journals to get the final selected journal is carried out through the following steps:

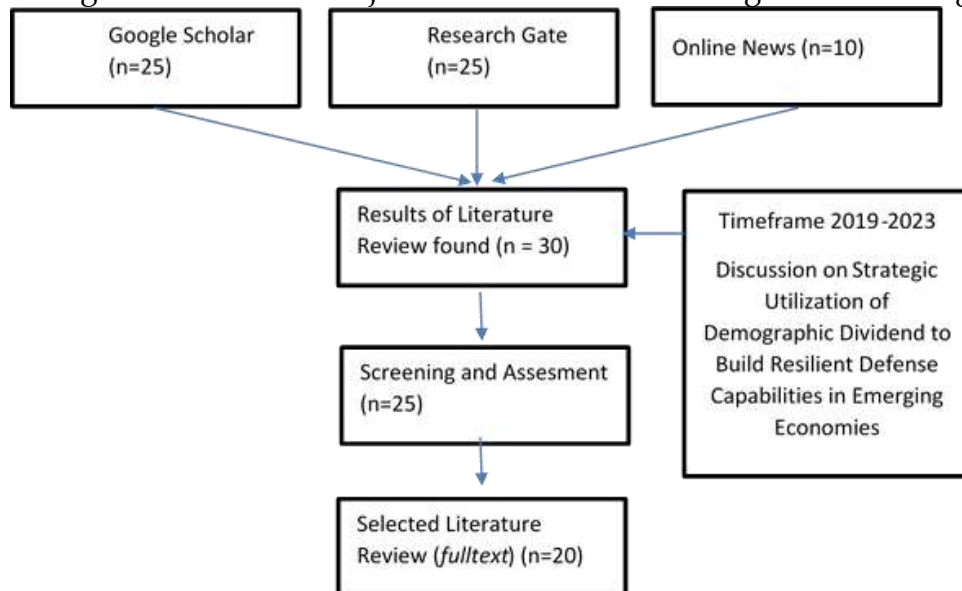


Figure.3 Steps of Literature Review

Source : Data Processed by Researchers, 2024

Based on the diagram presented, the literature review process focuses on utilizing demographic bonuses to strengthen defense resilience in developing countries. The review included sources from Google Scholar (n=25), ResearchGate (n=25), and online news media (n=10), resulting in 30 relevant studies. The studies were then filtered and assessed, with 20 full-text articles selected for in-depth analysis. The study timeframe was between 2019-2023, with a focus on the role of demographic bonuses in strengthening the defense capabilities of developing countries. This process ensures that the selected literature has been carefully selected and relevant to the topic of this research, especially related to defense strengthening strategies through optimization of demographic bonuses.

RESEARCH RESULT AND DISCUSSION

Based on the results of the analysis and search of journals and online news, the researcher conducted mapping to facilitate the literature review process presented in the following table:

Table.1 Previous Research

No.	Researcher & Year (APA)	Title	Methodology	Key Findings
1	Bloom, Canning, & Sevilla (2003)	The Demographic Dividend: A New Perspective on Economic Growth	Comparative analysis	Highlighted how demographic transitions contribute to economic and social resilience.
2	Leahy et al. (2010)	The Shape of Things to Come: Why Age Structure Matters to a Safer, More Equitable World	Empirical study, demographic analysis	Linked youth bulges with conflict in fragile states, emphasizing security strategies.
3	Gribble & Bremner (2012)	The Challenge of Attaining the Demographic Dividend	Qualitative case study	Emphasized the need for investment in education and healthcare for demographic dividends.
4	Lee & Mason (2010)	Fertility, Human Capital, and Economic Growth over the Demographic Transition	Econometric modeling	Showed how fertility decline and investments in human capital foster economic and defense growth.
5	Mukherjee (2016)	Demographic Dividend and National Security: A Case of India	Policy analysis	Identified how India could leverage its youth population to strengthen national security.
6	Bloom & Luca (2016)	Demographic Dividend and the Road to Development	Quantitative analysis	Argued that demographic changes offer a unique opportunity to enhance resilience in emerging economies.

7	Smith et al. (2018)	Youth Bulge and Political Instability: A Demographic Perspective	Statistical regression	Youth bulges, when not managed, can lead to instability, but with proper investment, boost defense.
8	Cincotta (2017)	Youth Bulge, Population Aging, and Armed Conflict: A Strategic Insight	Mixed methods	Examined demographic trends in emerging nations and their relation to military strength.
9	Bloom et al. (2019)	Demographics and Economic Development: Connections and Policy Implications	Cross-country analysis	Linked population structure with national growth and defense spending.
10	Aksu et al. (2020)	Human Capital, Defense Spending, and Economic Growth	Panel data regression	Demonstrated how investments in education and defense can capitalize on demographic dividends.
11	Jackson (2021)	Demography and Security: The Role of Population Dynamics in Emerging Economies	Strategic foresight	Discussed the need for defense planners to account for demographic trends in long-term strategies.
12	Lipsy & Tanaami (2022)	The Demographic Crisis in Asia: Implications for Security	Case study (Japan, Korea)	Analyzed the demographic crisis in Asian nations and how it impacts defense and security.
13	Cuaresma et al. (2020)	Demographic Transition and Economic Performance: Impacts on Defense Strategy	Econometric approach	Studied how economic transitions affect defense policies in emerging economies.
14	Sachs et al. (2019)	Population Growth and	Comparative case study	Demonstrated population growth's

		National Security: Synergy or Conflict?		dual role in either boosting or undermining national defense.
15	Jones et al. (2018)	National Security, Demographic Trends, and the Military Future	SWOT analysis	Showed that leveraging demographic shifts can significantly boost defense capabilities.
16	Chan (2019)	Demography, National Security, and Strategic Defense in Southeast Asia	Quantitative survey	Highlighted how Southeast Asian nations manage demographic shifts in defense strategies.
17	Nguyen & Doan (2021)	The Economic and Strategic Benefits of Vietnam's Youth Dividend	Case study, policy analysis	Demonstrated how Vietnam capitalized on its youth population for national security.
18	Lopez & Yoon (2020)	Population Aging and Defense Readiness in Emerging Economies	Scenario analysis	Showed the risks posed by an aging population on defense readiness in emerging nations.
19	Bongaarts (2018)	How Population Dynamics Shape National Defense Strategies	Comparative demographic analysis	Linked population dynamics with national military capabilities in low- and middle-income countries.
20	Torres & de Leon (2021)	Demographic Change and Military Strength: The Case of Latin America	Case study (Latin America)	Investigated how Latin American nations adjust defense strategies in response to demographic shifts.

Source : Data Processed from Various Sources, 2024

Table.2 Research Grouping

No	Results of Analysis	Correlated	Not Correlated
1	Strategy	19 Research	1 Research
2	Role	15 Research	5 Research

Source : Data processed by researchers from various sources, 2024

Emerging economies often find themselves balancing the promise of economic growth with the challenge of maintaining national security. A significant factor in achieving both goals is the demographic dividend, which refers to the economic potential that arises from shifts in the population's age structure, particularly when the working-age population becomes larger relative to dependents (children and the elderly). To effectively harness this dividend, nations must implement strategies that not only boost economic growth but also enhance defense capabilities. This paper outlines several strategies that emerging economies can employ to capitalize on their demographic dividend, thereby building resilient defense systems (Mukherjee, 2016).

A key strategy for leveraging the demographic dividend is investment in human capital and education. As noted by Bloom et al. (2003), demographic transitions create an opportunity for countries to enhance their economic and defense potential through investments in education. Countries experiencing a youth bulge—where a large portion of the population is young and entering the workforce—can harness this demographic advantage by ensuring that the population is well-educated and skilled. Gribble & Bremner (2012) also emphasize the critical role of education in achieving the demographic dividend, arguing that a workforce with high human capital can contribute both to economic growth and to the development of a strong defense force. Investments in secondary and tertiary education, particularly in science, technology, engineering, and mathematics (STEM) fields, are essential, as these areas are critical to defense industries. Expanding specialized military academies and defense-related educational programs will also ensure that youth are prepared for both economic and military roles. Lee & Mason (2010) demonstrate that educational investments, coupled with declines in fertility rates, lead to higher economic growth and stronger defense capabilities. Aksu et al. (2020) further show that such investments lead to synergies that can enhance national security in the long run.

Managing youth bulges is another critical strategy. Youth bulges have historically been linked to increased risks of social unrest and political instability, as noted by Leahy et al. (2010). However, if properly managed, these youth populations can become a significant asset for defense. Smith et al. (2018) argue that when young people are integrated into productive economic and military roles, they can contribute to both national growth and security. Governments can implement youth employment programs focused on defense-related sectors such as cybersecurity, intelligence, and military technology. Additionally, establishing mandatory or voluntary national service programs, similar to those in Israel and South Korea, can help channel the energies of youth into constructive roles.

Cincotta (2017) highlights how managing youth bulges effectively can lead to greater stability, while Mukherjee (2016) points out that India's demographic dividend offers a substantial opportunity for strengthening national security, provided youth are integrated into economic and defense systems.

Another critical advantage of the demographic dividend is the opportunity to drive technological advancement in defense. According to Bloom & Luca (2016), demographic changes, when paired with investments in technology and infrastructure, can enhance national resilience. The integration of young, tech-savvy populations into the defense sector can foster innovation in areas such as cybersecurity, artificial intelligence, and drone warfare—technologies that are crucial for modern defense systems. Governments can encourage public-private partnerships that foster innovation in these areas and develop government-funded research programs focused on emerging defense technologies. Nguyen & Doan (2021) highlight how Vietnam has capitalized on its youth dividend to develop its technology-driven defense sectors. Similarly, Bloom et al. (2019) show that population structure plays a crucial role in determining national growth and defense spending, especially when coupled with investments in technology.

However, addressing population aging is an essential consideration as youth bulges present short-term opportunities, but aging populations pose long-term challenges. Lopez & Yoon (2020) demonstrate that aging populations can undermine defense capabilities by reducing the pool of available military personnel. To mitigate this impact, emerging economies must develop strategies to ensure sustained defense readiness. This could include modernizing military infrastructure, increasing automation in defense systems, and implementing policies that encourage older individuals to remain economically active. Jackson (2021) emphasizes the need for long-term defense planning that accounts for demographic changes, particularly the aging of populations. Similarly, Torres & de Leon (2021) discuss how Latin American countries are adjusting their defense strategies in response to demographic shifts, highlighting the importance of strategic foresight.

Finally, cross-sector collaboration between the military, private sector, and civil society is essential to maximizing the potential of the demographic dividend for defense. Sachs et al. (2019) argue that population growth can either bolster or undermine national defense depending on the extent of collaboration between different sectors. Emerging economies should foster strong partnerships between the defense sector and industries contributing to national security, such as technology, education, and healthcare. Establishing inter-ministerial committees that coordinate defense strategies with educational and economic policies, and encouraging private-sector investment in defense industries, are key strategies. Jones et al. (2018) highlight that national security and demographic trends are deeply intertwined, and cross-sector collaboration is crucial for building resilient defense systems. Cuaresma et al. (2020) echo this, arguing that economic transitions must be accompanied by coordinated defense policies to ensure national security.

In conclusion, the demographic dividend presents a unique opportunity for emerging economies to build resilient defense capabilities. By investing in human capital, managing youth bulges, embracing technological advancements, addressing population aging, and fostering cross-sector collaboration, nations can transform demographic changes into strategic advantages for defense. The strategies outlined here provide a comprehensive framework for emerging economies to capitalize on their demographic dividends and strengthen national security in an increasingly complex global landscape.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, emerging economies stand at a pivotal juncture where their demographic dividend offers significant potential to enhance both economic growth and national security. Key to this is strategic investment in human capital, particularly education, with a focus on STEM fields and defense-related training. Managing youth bulges, by integrating young populations into productive economic and military roles, is crucial for stability and defense growth. Additionally, leveraging technological advancements through public-private partnerships will boost defense capabilities in critical areas such as cybersecurity and AI. However, countries must also address the challenges of population aging, ensuring sustained defense readiness through modernization and automation. Finally, fostering cross-sector collaboration between the military, private sector, and civil society will be essential to ensure that economic gains translate into resilient national defense systems. This holistic approach can transform demographic changes into strategic defense advantages.

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