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BIBLIOMETRIC ANALYSIS STUDY OF DEMOGRAPHIC DIVIDEND ON INDONESIA ECONOMICS GROWTH: A THREAT OR AN OPPORTUNITY? A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The demographic dividend significantly influences a country's economic trajectory. This study aims to provide insights and recommendations regarding the impact of the demographic dividend on Indonesia's economic growth, based on empirical evidence and current national conditions. A Systematic Literature Review (SLR) was conducted using 12 selected articles, which were analyzed and visualized through bibliometric techniques using the VOSviewer tool. The findings reveal a strong correlation between the demographic dividend and economic growth. This demographic potential can act as either an opportunity or a threat, depending on the education and skill levels of the working-age population. Key strategies for maximizing its benefits include enhancing human resource quality through competency-based education, improving infrastructure and public services, implementing structural reforms, and integrating sustainability considerations. Therefore, it is crucial for the government to establish targeted policies that harness the demographic dividend to drive future economic growth.

Keywords: *Demographic Dividend; Economic Growth; Systematic Literature Review; Bibliometric; VOSviewer.*

INTRODUCTION

The National Long-Term Development Plan (RPJPN), developed by the government, aims to address the challenges posed by the demographic dividend—a shift in the age structure that can significantly impact the country's economic trajectory. However, this plan may prove ineffective if it does not incorporate accurate projections of the future working-age population. These estimates are essential for evaluating current development progress and formulating forward-looking policies. Given that the demographic dividend requires early and strategic

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preparation, understanding demographic trends and shifts is crucial for effective national development planning and implementation (Moreland, 2017).

According to data from the Central Bureau of Statistics (BPS, 2023), Indonesia's population continues to grow alongside rapid demographic shifts. In 2020, the number of people in the productive age group was approximately 186.77 million, and this figure is projected to increase to 196.13 million by 2030. This projection positions Indonesia as the country with the largest workforce in Asia. The demographic dividend refers to the potential for accelerated economic growth resulting from changes in the age structure of the population, particularly when declining birth and mortality rates lead to a higher proportion of the population being of working age (Andriani & Yustini, 2021).

The demographic dividend is closely linked to the concept of a "window of opportunity", which refers to a period that must be strategically managed to generate positive economic outcomes, including increased productivity and long-term economic growth (Joe et al., 2018). This window is often measured through the dependency ratio, which reflects the proportion of the non-productive population (children and elderly) relative to the working-age population. According to data from the Central Bureau of Statistics (BPS, 2023), Indonesia's dependency ratio is projected to increase steadily between 2020 and 2050. This indicates that the financial and social burden on the productive age group will grow as they are expected to support a larger non-working population. Therefore, it is essential for the government to implement targeted support programs, such as human capital development initiatives and infrastructure improvements, to fully leverage the demographic dividend and sustain future economic growth.

One of the potential threats associated with the demographic dividend is the rapid advancement of technology, which may reduce labour demand due to increased automation and digitalization. This technological shift can widen workforce disparities if the labour force is not equipped with adequate skills. Therefore, urgent intervention by policymakers is needed to enhance the quality of human resources. According to World Bank data (2023), Indonesia's annual income level remains relatively low. In 2022, it ranked 141st globally, with a per capita income of USD 4,788. This low-income level is attributed to stagnant economic

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growth, relatively low GDP, and a growing population. Although the economy grew by 4.9% in 2023, this was a decline from the 5.3% growth recorded in the previous year (World Bank, 2023a). These figures suggest that the expansion of Indonesia's working-age population has not yet translated into proportional economic gains. As Amirusholihin and Listiono (2018) argue, the availability of skilled labour is a critical factor in driving economic growth. Hence, Indonesia must address the growing challenges of its productive-age population by implementing long-term strategies to develop a highly skilled and competitive workforce.

In addition, stronger support is needed for the implementation of strategic government policies aimed at addressing the challenges posed by the demographic dividend, in order to foster a stable economic environment. Ulhaq and Wahid (2022) highlight that the working-age population in Indonesia is increasingly vulnerable to future poverty. The growing challenges related to the demographic dividend—such as uneven economic growth and the low quality of human resources—indicate that the country is not yet adequately prepared to fully capitalize on this demographic opportunity. Without timely and effective government intervention, these challenges may lead to increased economic inequality and stagnating or even declining economic growth. Therefore, this study aims to objectively examine various assumptions and strategies that can be applied in the Indonesian context to address the demographic dividend. The contribution of this literature lies in offering evidence-based insights and policy recommendations to help Indonesia manage its demographic transition and promote sustainable economic growth, based on both empirical data and current national conditions.

METHODOLOGY

This study employed a Systematic Literature Review (SLR**)** to identify, summarize, and synthesize key findings related to the demographic dividend and its impact on Indonesia's economic growth. According to Hadi et al. (2020), a systematic review that integrates data to generate new theories or deepen conceptual understanding is referred to as a meta-synthesis. In line with this approach, the authors applied meta-synthesis techniques to analyze selected literature and uncover new perspectives that contribute to a deeper understanding

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of how the demographic dividend influences economic growth in the Indonesian context.

This study referenced 12 scientific articles obtained from several academic databases, including Google Scholar, Elsevier, Semantic Scholar, and Taylor & Francis. The literature search was conducted using the keywords “Demographic Bonus and Economic Growth” and “Demographic Dividend and Economic Growth.” The selected articles were then analyzed and visualized using bibliometric network mapping with the VOSviewer application. This mapping process helped to construct a research framework to explore whether the demographic dividend directly influences economic growth. VOSviewer was used to extract and visualize key patterns and relationships within the selected literature.

This study did not restrict the scope of the literature to case studies from specific regions. However, priority was given to studies conducted in developing countries or those with demographic characteristics similar to Indonesia. The selection of literature sources was carried out as follows:

Table 1. List of Literature Review Processed in 2025

No	Researchers & Year	Title	The Name of Article
1	(Amirusholihin & Listiono, 2018)	Demographic Bonus Analysis and Economic Growth of East Java	East Java Economic Journal
2	(Santosa et al., 2017)	An Understanding Demographic Bonus and Its Implication among Teenagers in Deli Serdang District	1st Public Health International Conference
3	(Ariteja, 2017)	Demographic Bonus for Indonesia: Challenges and Policy Implications of Promoting Universal Health Coverage	Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning
4	(Andriani & Yustini, 2021)	Anticipating the demographic bonus from the perspective of human capital in Indonesia	International Journal of Research in Business and Social Science
5	(Joe et al., 2018)	Swimming against the tide: economic growth and demographic dividend in India	Asian Population Studies
6	(Ulhaq & Wahid, 2022)	System Dynamics Modelling for Demographic Bonus Projection in Indonesia	IOP Conference Series: Earth and Environmental Science

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7	(Nguea, 2023)	Demographic dividend and environmental sustainability: The mediation effects of economic growth, ICT, foreign direct investment, and urbanization	Next Sustainability
8	(Bahan & Dramani, 2020)	Demographic Dividend and Social Well-Being in Burkina Faso: Evidences from Household Living Conditions Surveys	International Journal of Applied Economics, Finance and Accounting
9	(Young, 2019)	Economic Growth and Demographic Dividend Nexus in Nigeria: A Vector Autoregressive (VAR) Approach	Asian Social Science
10	(Berde & Kurbanova, 2023)	Does the demographic dividend with human capital development yield an economic dividend? Evidence from Central Asia	Post-Communist Economies
11	(Jain & Goli, 2022)	Potential demographic dividend for India, 2001 to 2061: a macro-simulation projection using the spectrum model	SN Social Sciences
12	(Tamboura & Zahonogo, 2020)	Demographic dividend and economic growth in West African Economic and Monetary Union (WAEMU)	Journal of Aging & Innovation

This Systematic Literature Review (SLR) was conducted in a structured manner, beginning with a comprehensive literature search to minimize bias. The selected studies were then analyzed to extract key findings related to the challenges, discussions, and implications identified by previous researchers. These findings were used as a comparative framework to evaluate the current demographic dividend conditions in Indonesia and their potential to support economic growth. The discussion was carried out qualitatively by aligning insights from prior research with Indonesia's present demographic context. Relevant literature served as both a reference point and a comparative lens to strengthen the analytical depth of this study. This approach allowed the authors to synthesize aggregate findings from the literature and highlight the relevance and significance of the demographic dividend for Indonesia's future development.

RESULT AND DISCUSSION

Analysing the Impact of Demographic Dividend on Indonesia's Economic Growth

The results of the analysis of discussion scope mapping from 12 reference journals then were formed as the authors' initial hypothesis. As for the results of the analysis of the relationship between Demographic Dividend or Demographic Bonus

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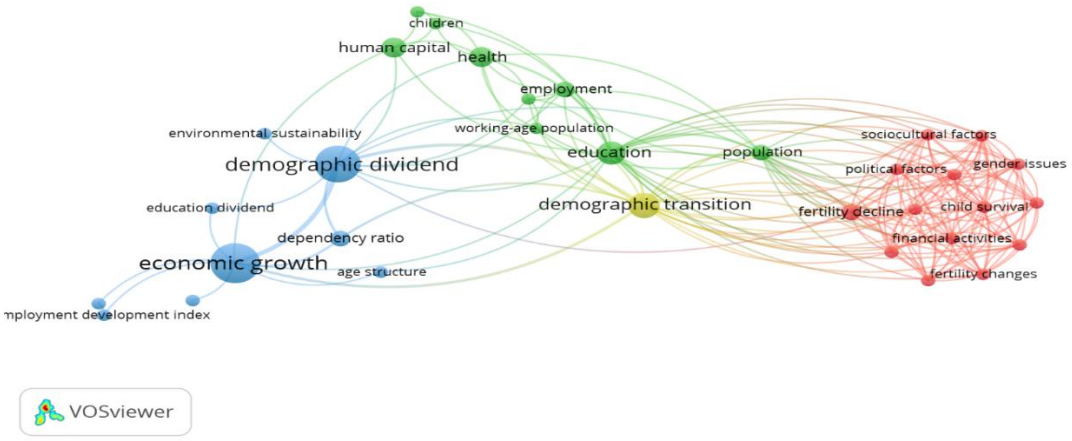
and Economic Growth, a hypothesis framework has been obtained using VosViewer with the following data visualization and crawling methods:

Figure 1. Secondary Data of 12 Reference articles Processed, 2023



Based on the processing results, the relationship between Demographic Dividend and Economic Growth is very strong. This means that Demographic Dividend is an important indicator that Indonesia needs to pay attention to for Economic Growth in the future. The results of several reference literature also revealed similar things as stated by Moreland (2017) that Demographic Dividend is something that needs to be utilized by the country to obtain a Window of Opportunity which will later affect the high Economic Growth. If interpreted broadly, population structure plays an important role in economic growth, thus countries that have more potential young population structure (productive age) will experience better economic growth, while regions that have a higher proportion of older people tend to experience retardation of economic growth. (Amirusholihin & Listiono, 2018).

According to Santosa et al (2017), this demographic dividend can be an advantage or a threat, in which the demographic bonus can be an advantage if the population aged 15-64 years is qualified and productive. On the other hand, the demographic dividend becomes a threat if the population aged 15-64 years does not have adequate knowledge and skills thus the impact is a decrease in the value of the country's sustainability which will be threatened. As obtained in the VosViewer results above, Demographic Dividend is related to education level. Thus, from these

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results, an improvement in Indonesian Education is needed to obtain adequate quality human resources. The research conducted by Ariteja (2017) revealed that the demographic dividend opportunity needs to be prepared at this time seeing the lack of qualified human resources which has an impact on gaps in several industries, especially in health facilities that require the role of productive working age to be able to serve and finance non-productive age.

According to Joe et al (2018), the quality of human resources will later contribute to creating a renewable innovation both in terms of technology, which will later affect the productivity results of all sectors and affect the increase in economic growth. The research of Andriani & Yustini (2021) recommends the implementation of competency-based training approach (CBT) education to present a solution in creating competent quality human resources, so that those in the productive age in the future are not burdened with the problems of unemployment or poverty. As illustrated in the VosViewer results, the level of quality education, especially the age of the workforce, needs to be increased thus it will correlate with an increase in economic growth in the future. The research of Ulhaq & Wahid (2022) also explains the problem that Indonesia currently does not yet reflect the form of absorption of the productive workforce that is prepared. It also conveyed that working age people are vulnerable to poverty in their old age. Therefore, it is needed to be minimized by improving the quality of human resources through several instruments, including the quality of education, training and others.

The current challenge is that the Demographic Bonus will also be a threat to Environmetal sustainability. It was stated by Nguea (2023) that The increase in population will actually have a negative impact on environmental sustainability because young people who tend to consume more energy, that if curated with the massive use of technology will tend to exploit resources excessively. Furthermore, Nguea (2023) explained that a policy that must prioritize education and awareness programs to promote sustainable practices and lifestyles amidst the current challenges of the Demographic Bonus is needed. If we look at the VosViewer results, there is an Environmental Sustainability point which also correlates with Demographic Dividend or Demographic Bonus which will also influence the level of economic growth due to increasingly limited environmental sustainability aspects.

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Based on the research of Nguea (2023) and Amirusholihin & Listiono (2018), Dividend demographic challenges will become a threat if the government is unable to carry out adequate infrastructure or service improvements in each region. As we know that inequality that occurs in Indonesia today still occurs, especially the issue of the migration process in Indonesia which is more focused on Java-centric (Praditya et al., 2023). Moreover, Praditya et al (2023) revealed that this paradigm needs to be changed, thus the strategy for moving the migration destination centre is focused on one region, and there will be a disparity in the development of each region in Indonesia, so the paradigm regarding Java Centric needs to be shifted to the Indonesia Centric concept. The real threat is that the use of the demographic dividend which is linked to inadequate public infrastructure inequality will trigger urbanization and population migration thus the contribution of the productive age will dominate in one area only. This happens because areas such as urban areas will become a special attraction as the migration destination due to the fulfilment of all adequate facilities and associated with an increase in the amount of community income. If this is allowed to happen, inequality will occur in rural areas due to the lack of improvement in the quality of human resources and economic growth in rural areas.

If we look at the results of VOSviewer, it was found that the population caused by sociodemographic turmoil will have an impact on demographic transition, where changes in population conditions will grow rapidly and will trigger the growth and development of the industrialization sector which will later increase the rate of economic growth. This is what attracts rural communities to urbanize or migrate, because of the potential of urban areas to increase the income of rural residents. If equitable infrastructure distribution can be done in Indonesia by utilizing the Demographic Dividend potential it has, it will be a positive thing for the level of economic growth in Indonesia and the relatively high level of welfare of the population in each region of Indonesia (Bahan & Dramani, 2020).

Based on the study results of Tamboura & Zahonogo (2020), Demographic Dividend will drive an increase in per capita income. Moreover, the research of Jain & Goli (2022) explained that When the aging period of the population already occurs after the Demographic Dividend, the elderly population helps in the accumulation of

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capital and savings made during the previous year of employment and thus contributes to economic growth. Therefore, the current condition of Demographic Dividend can be driven quickly by supporting factors such as improving the quality of education, health services and others, because this will trigger the development of economic growth in the future. When population aging has occurred, the contribution of savings generated and capital accumulation is needed for economic growth (Hsu & Lo, 2019).

If we look at the VOSviewer results above, there are also health aspects that need to be met to support the existence of this Demographic Dividend. Health becomes an important aspect that will later affect the quality of working age in obtaining higher levels of productivity, and then will correlate with increased economic growth (Young, 2019). As conveyed by Bloom et al (2018) that better health directly increases labor market participation and worker productivity.

Looking at some of the explanations above, it can be concluded that the Demographic Dividend has a major influence on economic growth today and even far in the future. This is adjusted to some of the potential possessed accompanied by good policies on the potential of demographic dividend. This is similar to what was conveyed by Berde & Kurbanova (2023) who stated that the demographic dividend really depends on government policy, because the government plays an important role in making regulations on the social system, including economics, education, health and others. So, the government's attitude is needed in taking policies that prioritize future policies by utilizing the potential demographic bonus that is available now and in the future in order to create high economic growth. The strategies that can be applied to create Demographic Dividend opportunities for economic growth will be explained in the next sub-chapter.

Strategy for Creating Demographic Dividend Opportunities for Indonesia Economic Growth

In this discussion, the author simulated several alternatives or strategies to create Demographic Dividend opportunities for Indonesia economic growth. The strategy was taken or adopted from several implications of reference journals which the author then simulated and adjusted to the conditions that currently occur in

Indonesia. The research implication results sourced from 12 reference articles or research data were obtained as follows:

Table 2. List of Implications of 12 Reference Articles Processed, 2023

Author	Problem	Implication
(Amirusholihin & Listiono, 2018)	1. There was a disparity in demographic dividend in several regions of East Java, there were several regions that have a non-productive age structure higher than the productive age. This was due to migration or urbanization factors that were too large and centralized in certain areas	The need for government attitudes in overcoming the gap in population composition between regions through the construction of public facilities and infrastructure that is evenly distributed in each region. This is to increase the attractiveness of the productive age population to be in the area of origin. In addition, the need for the government to develop creativity-based businesses both goods and services in order to absorb some of the productive age population to work
(Santosa et al., 2017)	Population dynamics in Deli Serdang entered a crucial stage due to neglected demographic changes, Deli Serdang population development policy had not yet become part of Development policy. Currently, the Deli Serdang area was entering the Window of Opportunity phase but there were no instruments that support this opportunity	There is a need for preparation of the quality of education and improvement of the quality of human resources at this time, as well as the concept of local-based economic policies that are specific, responsive and creative to overcome the problem of unemployment of productive age people.
(Ariteja, 2017)	The government also faced the problem of inequality in development in the health sector which had an impact on the UHC campaign, resulting in a low portion of services for the elderly even though funding for the elderly population can be minimized by income transfers from teenagers. The government focused more on fiscal policy and not on resource development to increase UHC	(1) the government should focus more on self-funded premiums. This is because the large number of young people of working age is contributed by the demographic dividend, (2) Developing appropriate policies to utilize abundant labour resources to become health workers, for example by providing scholarships or incentives to young people to fill health worker gaps in remote areas.
(Andriani & Yustini, 2021)	(1) The problem of low quality of human resources (HR) would have a negative influence on various sectors, including the education, economy, and health sectors, (2) 60% of workers in Indonesia work in fields that were not in accordance with their education because not all Indonesians had access to education, especially the lower middle class	creating an educated workforce as human resources, a competent and innovative workforce through implementing the CBT program (2)

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(Joe et al., 2018)	(1) The increase in the number of working-age population in India was not in line with low productivity in all sectors (2) Low competitiveness and low employment in the labour-intensive and capital-intensive goods manufacturing sector	(1) Increasing women's education has important implications for reducing the Total Fertility Rate and investment in human resources (2) In order for some of these regions in India can achieve inequality demographic, policies that encourage smaller families are needed
(Ulhaq & Wahid, 2022)	(1) Indonesia is predicted to experience a demographic dividend in 2030-2040, but has not reflected the form of productive labour absorption that is currently prepared. (2) In Indonesia, there are many projections that say that the working age population is vulnerable to poverty in their old age	(1) the need for access to health, improved education for all age groups, and creating more productive employment opportunities (2) The need for targeted and effective government policies in facing the population aging that is currently occurring
(Nguea, 2023)	(1) The occurrence of environmental degradation due to increasing population in African countries, (2) The increasing number of working-age population in energy consumption than the elderly thus disrupting environmental sustainability in Africa (3) The existence of ICT, urbanization, FDI and economic growth had an impact on environmental degradation	(1) Policies should prioritize education and awareness programs to promote sustainable practices and lifestyles, (2) Policies should also focus on fostering sustainable urbanization and urban planning to accommodate population growth and urban development, (3) Governments can incentivize the adoption of green technologies and ICTs to improve resource efficiency, reduce energy consumption, and lower environmental impact, (4) Policies should aim to ensure that foreign investment contributes to the sustainable development goals and does not result in overexploitation of resources or environmental degradation (5) Policymakers must prioritize sustainable economic growth that separates resource consumption and environmental impact from GDP growth
(Bahan & Dramani, 2020)	(1) The high Dependency Ratio in Burkina Faso was seen due to the high Total Fertility Rate, whereas in other countries the Dependency Ratio tended to decrease due to high fertility rates. (2) Life expectancy remained low and progress was slower in Sub-Saharan Africa	(1) The government should increase investment in employment, education, economic policy, governance and health to take advantage of the demographic bonus (2) The government should boost the energy sector by subsidizing only the cost of electricity but also encouraging the use of solar energy that has the least negative impact on public health (3) The need for the role of the Government to develop strategies that can help reduce the impact of inflation on household life
(Young, 2019)	(1) There was a gap between the occurrence of Demographic Dividend and Education Dividend in Nigeria (2)	The need to shift the global economy to more knowledge-based sectors, Investment in human capital

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	Nigerian government policy in facing the challenges of the demographic dividend was focused on increasing the workforce through developing the industrial sector, while developing the quality of human resources was still not a special concern of the Nigerian government	formation needs to be given top priority because a country's competitiveness in the New International Economic Order (NIEO) is closely related to the quality of its workforce.
(Berde & Kurbanova, 2023)	(1) There was migration due to World War II from Russia to the Central Asian region which resulted in a surge in the population of the Central Asian region today (2) Total Fertility Rate in Middle East Region Sharply Decreased (3) The socio-demographic circumstances, the effectiveness of governance during the transition of age structures in the Middle East had received less attention	(1) To benefit from the demographic transition, improvements in the capabilities of the working-age population must be effectively accumulated, (2) The importance of the government in gaining the ability to productively absorb the increasing number of active populations productively through structural reforms (3) Efforts need to be made to improve democracy by giving more freedom and access to citizens to participate in decision-making processes.
(Jain & Goli, 2022)	(1) The research focused more on modelling the projection of the potential obtained by India in 2001-2061 due to high demographic dividend and socioeconomic changes. In some literature, there was a knowledge gap regarding the potential demographic dividend in India (2) the reduction of the Indian state budget in the education and health sectors, and the poor quality of learning in India (3) declining household savings rates, urbanization of rural poverty, and rapid increase in the elderly population.	(1) Since the realization of the demographic dividend in India depends on the availability of a healthy labour force, productive employment, higher education levels, better infrastructure, and women's empowerment, the country needs to take multi-sectoral interventions to make policies that are conducive to availing the demographic bonus
(Tamboura & Zahonogo, 2020)	(1) Sub-Saharan African countries dominated regarding low economic growth rates (2) the gap between GDP growth in Sub-Saharan African countries due to changes in the age structure of the population (3) The population growth was not in line with low GDP per capita conditions (4) The magnitude of the economic stakes associated with changes in the age structure of the population in *West African Economic and Monetary Union* (WAEMU)	(1) Economic policy needs to be accelerated, because the magnitude of changes in the economic structure of the population in WAEMU is an important indicator in economic growth (2) Developing the workforce sector through investment policies in industrialization development so that the workforce can be absorbed (3) Reducing mortality through facilitation of health services as well as reducing birth rates to start a process of sustainable growth.

Based on some of the implications above, most of the scope of implications are about improving education and the quality of human resources, increasing the inclusion of infrastructure and public service facilities, increasing investment in

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environmentally friendly industrialization, and the establishment of effective development regulations.

Improving education and the quality of human resources are the most prioritized things in Demographic Dividend. This is very relevant to the existing conditions in Indonesia, where according to the authors' subjective thought, in the education system in Indonesia there is still a gap or disparity between several regions. Inequality of access to education will be a negative factor in utilizing the potential of Demographic Dividend that currently occurs. A study conducted by Liyana (2023) described the condition of Indonesian Education between rural and urban education that is far different thus the scientific gap obtained in the same strata is relatively far. The education gap between regions will cause inequality in terms of technology adoption, where lower education will be more difficult to implement and adopt new technologies so that this will have an impact on economic inequality between regions (Anang et al., 2020). The strategy that needs to be done is to improve the quality of competency-based education (Andriani & Yustini, 2021), and Education that leads to an environmentally sustainable lifestyle (Nguea, 2023).

In addition, the strategy that needs to be implemented in facing the Demographic Dividend is equal distribution of public services and infrastructure. Indonesia in terms of development during the 19th century until now is still concentrated on the island of Java which is known as Java-centric. This has raised several issues regarding development inequality in eastern Indonesia where public service facilities are still unequal. This is in line with the study of Ramadanti et al (2023) which showed that Development inequality in Indonesia is caused by differences in resources, the implementation of which results in differences in regional capabilities in implementing regional development. Development inequality will trigger people who migrate to other regions and make rural areas more disadvantaged (Amirusholihin & Listiono, 2018).

Infrastructure development initiatives in Indonesia—such as the relocation of the national capital (Praditya et al., 2023) and the implementation of the National Long-Term Development Plan (RPJPN)—represent important steps toward addressing current regional disparities. However, the greater challenge lies in establishing a multi-sectoral development policy, one that integrates key sectors

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such as health, education, and investment to ensure inclusive and sustainable growth. In this context, collaboration between the government and the private sector is essential to promote development strategies that effectively leverage the demographic dividend (Jain & Goli, 2022). Crucially, the direction of development must prioritize sustainability. One pressing concern is that significant investments are being directed toward the exploitation of natural resources, often without adequate environmental safeguards (Nguea, 2023). To mitigate this, policies must adopt a sustainability-focused approach to ensure long-term resource availability and environmental resilience. This is particularly relevant given the increasing pressure on Indonesia's natural resources in the face of rapid development (Kubitza et al., 2018).

Public facilities that need to be emphasized are health facilities. This is very necessary because the potential Demographic Dividend of working or productive age will be burdened with the Dependency Ratio, namely the burden of productive age on non-productive age. A high mortality rate indicates a low level of community welfare. The Demographic Dividend challenge is to create productive age population who can contribute to handling health problems. Health aspect is very important in the Dependency Ratio because this is related to the continuity of productive age in increasing work productivity (Bloom et al., 2018). Health becomes an important aspect that will later affect the quality of working age in obtaining higher levels of productivity, and then will correlate with increased economic growth (Young, 2019). Therefore, some of these arguments conclude that appropriate policy development is needed to utilize abundant labor resources to become health workers, for example by providing scholarships or incentives to the younger generation to fill the gap in health workers in remote areas (Ariteja, 2017), and improving health care facilities (Berde & Kurbanova, 2023) & (Tamboura & Zahonogo, 2020)

One strategy to answer other challenges of the Demographic Bonus is to increase the amount of industrialization so that it can absorb productive workers. In this case, there is a need for targeted policies that create a good economic climate and attract investor interest to increase economic competitiveness, especially in rural areas. (Jain & Goli, 2022). Urban areas that often attract investors for

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industrialization development will trigger the migration of rural residents to urban areas, in this case it will have an impact on the gap in population composition between regions. Therefore, the government needs to develop various kinds of creativity-based businesses, both goods and services (Amirusholihin & Listiono, 2018) & (Bahan & Dramani, 2020). In addition, the government needs to manage resources by utilizing the potential resources owned by each region, so as to reduce unemployment in the area, reduce the number of population migration and maximize the management of Demographic Dividend in the area (Ramadanti et al., 2023).

CONCLUSION

Demographic Dividend in Indonesia requires the achievement of a Window of Opportunity which is an opportunity to be managed and has a positive impact on economic growth in the future. Demographic Dividend aims to increase population productivity by reducing the gap between current and future generations. This demographic bonus can be an opportunity if the population of 15-64 years is qualified and productive, and the demographic bonus becomes a threat if the population aged 15-64 years does not have adequate knowledge and skills. The Demographic Bonus will contribute to creating a renewable innovation in terms of technology, which will affect the productivity output of the sector and its effect on increasing economic growth.

The success of the Demographic Dividend depends on the implementation of programs aimed to improve the quality of services of human resources through adequate and competency-based education management and education based on environmental awareness. The implementation of the Demographic Dividend management strategy needs to be carefully managed to create a stable economic climate. The gap between current and future generations is an important factor in determining the success of Demographic Dividend. Therefore, it is necessary for the Indonesian state to prepare a cash program and solution to encourage the acceleration of human resources and other forms of economic support that need to be utilized, such as infrastructure improvements, health services improvements, structural reforms, and Environmental Sustainability-based Demographic Dividend management. Indonesia also needs a directed and effective development policy

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system in the Demographic Dividend management mechanism to face the threat of population aging and achieve increased economic growth

REFERENCES

Amirusholihin, & Listiono. (2018). Demographic Bonus Analysis and Economic Growth of East Java. *East Java Economic Journal*, *2*(1), 8–21. https://doi.org/10.53572/ejavec.v2i1.10

Anang, B. T., Alhassan, H., & Danso-Abbeam, G. (2020). Estimating Technology Adoption And Technical Efficiency In Smallholder Maize Production: A Double Bootstrap DEA Approach. *Cogent Food and Agriculture*, *6*(1), 1–16. https://doi.org/10.1080/23311932.2020.1833421

Andriani, D., & Yustini, T. (2021). Anticipating The Demographic Bonus From The Perspective Of Human Capital In Indonesia. *International Journal of Research in Business And Social Science*, *10*(6), 141–152.

Ariteja, S. (2017). Demographic Bonus for Indonesia: Challenges and Policy Implications of Promoting Universal Health Coverage. *Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning*, *1*(3), 265–274. https://doi.org/10.36574/jpp.v1i3.24

Bahan, D., & Dramani, L. (2020). Demographic Dividend and Social Well-Being in Burkina Faso: Evidences from Household Living Conditions Surveys. *International Journal of Applied Economics, Finance and Accounting*, *6*(1), 30–41. https://doi.org/10.33094/8.2017.2020.61.30.41

Berde, É., & Kurbanova, M. (2023). Does The Demographic Dividend With Human Capital Development Yield An Economic Dividend? Evidence From Central Asia. *Post-Communist Economies*, *35*(2), 154–178. https://doi.org/10.1080/14631377.2022.2164782

Bloom, D. E., Kotschy, R., Prettner, K., Canning, D., & Schünemann, J. (2018). Health and Economic Growth: Reconciling the Micro and Macro Evidence. *EconStor*, 1–32. https://doi.org/10.2139/ssrn.4148203

BPS. (2023). *Proyeksi Penduduk Indonesia 2020-2050 : Hasil Sensus Penduduk 2020*.

Hadi, S., Tjahjono, H. K., & Palupi, M. (2020). Systematic Review : Meta Sintesis Untuk Riset Perilaku Organisasional. In *VIVAVICTORY* (pp. 1–197).

Hsu, Y.-H., & Lo, H.-C. (2019). The Impacts of Population Aging on Saving, Capital Formation, and Economic Growth. *American Journal of Industrial and Business Management*, *09*(12), 2231–2249. https://doi.org/10.4236/ajibm.2019.912148

Jain, N., & Goli, S. (2022). Potential demographic dividend for India, 2001 to 2061: a macro-simulation projection using the spectrum model. *SN Social Sciences*, *2*(171), 1–23. https://doi.org/10.1007/s43545-022-00462-0

Joe, W., Kumar, A., & Rajpal, S. (2018). Swimming against the tide: economic growth and demographic dividend in India. *Asian Population Studies*, *14*(2), 211–227. https://doi.org/10.1080/17441730.2018.1446379

Kubitza, C., Krishna, V. V., Urban, K., Alamsyah, Z., & Qaim, M. (2018). Land Property Rights, Agricultural Intensification, and Deforestation in Indonesia. *Ecological Economics*, *147*(1), 312–321. https://doi.org/10.1016/j.ecolecon.2018.01.021

pISSN: 2338-6746
eISSN: 2615-3491

Liyana, N. F. (2023). The Effect of Educational Inequality on Economic Growth in Indonesia. *Jurnal Pajak Dan Keuangan Negara*, *5*(1), 144–153. https://doi.org/10.47175/rissj.v1i3.103

Moreland, R. S. (2017). Can Nigeria Attain a Demographic Dividend? *African Population Studies*, *31*(1), 1–7. http://aps.journals.ac.za/pub/article/view/1002/762

Nguea, S. M. (2023). Demographic dividend and environmental sustainability: The mediation effects of economic growth, ICT, foreign direct investment, and urbanization. *Next Sustainability*, *2*(1), 1–11. https://doi.org/10.1016/j.nxsust.2023.100005

Praditya, E., Suprapto, F. A., Ali, Y., Surjaatmadja, S., & Duarte, R. (2023). Nusantara Capital City (IKN): Threats and Defense Strategies for Indonesia's New Capital. *The Journal of Indonesia Sustainable Development Planning*, *4*(1), 21–34. https://doi.org/10.46456/jisdep.v4i1.420

Ramadanti, V., Salim, A., & Suhab, S. (2023). The Effect of Regional Government Expenditures on Regional Development Inequality in Eastern Indonesia, 2015-2020. *Jambura Equilibrium Journal (JEJ)*, *5*(1), 2023.

Santosa, H., Mutiara, E., & Juanita, J. (2017). An Understanding Demographic Bonus and Its Implication among Teenagers in Deli Serdang District. *1st Public Health International Conference*, *1*(1), 404–408. https://doi.org/10.2991/phico-16.2017.7

Tamboura, H., & Zahonogo, P. (2020). Demographic dividend and economic growth in West African Economic and Monetary Union (WAEMU). *Journal of Aging and Innovation*, *9*(2), 126–145. https://doi.org/10.36957/jai.2182-696X.v9i3-7

Ulhaq, M. D., & Wahid, A. (2022). System Dynamics Modeling for Demographic Bonus Projection in Indonesia. *IOP Conference Series: Earth and Environmental Science*, *1039*(1), 1–11. https://doi.org/10.1088/1755-1315/1039/1/012031

World Bank. (2023a). *A World Bank Group Flagship Report: Global Economic Prospects*.

World Bank. (2023b). *World Bank national accounts data*.

Young, A. O. (2019). Economic Growth and Demographic Dividend Nexus in Nigeria: A Vector Autoregressive (VAR) Approach. *Asian Social Science*, *15*(2), 37–59. https://doi.org/10.5539/ass.v15n2p37