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ANALYSIS OF THE IMPACT OF POPULATION GROWTH IN INDONESIA

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ABSTRACT

This literature review analyzed findings published in academic journals, focusing on the impact of population growth on various aspects of Indonesia's environment. The study employs a qualitative research approach using literature review methods to identify, analyze, and explore previous research results. The findings indicate that high population growth can lead to several issues, including decreased population welfare, heightened potential for conflict, increased competition for employment, housing, and natural resources, and a decline in environmental quality. The deterioration in environmental quality is evident in the decline of water, air, and land quality. To address the consequences of rapid population growth, it is essential to implement measures for population control and to enhance welfare through targeted programs.

Keywords: Population Growth Rate, Population Problems, Environment.

ABSTRAK

Penelitian ini adalah studi literatur yang menganalisis berbagai hasil temuan yang telah dipublikasikan dalam bentuk artikel pada jurnal berdasarkan penelitian sebelumnya. Artikel ini bertujuan untuk menggambarkan dampak pertumbuhan penduduk terhadap berbagai aspek termasuk terhadap lingkungan di Indonesia. Jenis penelitian adalah penelitian kualitatif dengan metode studi literatur melalui cara mengidentifikasi, menganalisis serta mendalami berbagai temuan dari hasil penelitian yang telah dilakukan sebelumnya. Hasil studi menunjukkan berbagai masalah dapat terjadi sebagai akibat dari tingginya pertumbuhan penduduk, diantaranya: menurunnya kesejahteraan penduduk, meningkatnya potensi terjadi konflik, meningkatnya persaingan lapangan kerja, meningkatnya persaingan dalam mendapatkan pemukiman, persaingan dalam memperoleh sumber daya alam, dan menurunnya kualitas lingkungan. Penurunan kualitas lingkungan terlihat dari menurunnya kualitas air, udara dan lahan. Berbagai upaya perlu dilakukan untuk menanggulangi dampak dari tingginya pertumbuhan penduduk, diantaranya upaya pengendalian pertumbuhan penduduk dan upaya meningkatkan kesejahteraan melalui berbagai program.

Kata Kunci: Laju Pertumbuhan Penduduk, Masalah Kependudukan, Lingkungan Hidup.

INTRODUCTION

A literature study, also known as a critical review, encompasses more than merely reading existing literature. It involves a thorough process of identifying, analyzing, and synthesizing content, ultimately presenting a comprehensive and critical evaluation of previous research on a specific topic. Zed (2008) defines a literature study as a systematic approach to data collection, which includes gathering information from reading materials, library resources, and various other references that contribute to the management of research materials.

Indonesia has a significant population growth rate of 1.17% in 2022 which slightly decreased from 1.22% in the

preceding two years (Statistics Indonesia, 2023)—continues to experience an upward trend in its population. The results of the 2020 population census recorded a population of 270,203,917, marking an increase from 237,556,363 in the 2010 census (Statistics Indonesia, 2022). This indicates that over a decade, Indonesia's population grew by 32,647,554 people, averaging an annual increase of 3,264,755 people between 2010 and 2020. Notably, this two-year population growth exceeds the total population of Singapore in 2020, which stood at 5,850,342 (United Nations, 2023). The following table presents data on population growth in Indonesia, sourced from various references.

Table 1. The Growth of Indonesian Population

Year	Population	Population Increase	Time (Year)
1920	52,300,000		10
1930	60,700,000	840,000	10
1940	70,400,000	970,000	10
1950	77,200,000	680,000	10
1960	97,200,000	2,000,000	10
1970	107,200,000	1,000,000	10
1980	146,935,000	3,973,500	10
1990	178,500,000	3,156,500	10
2000	206,264,595	2,776,459	10
2010	237,641,326	3,137,673	10
2015	255,708,785	4,013,491	5
2020	270,203,917	2,899,026	5
2024	279,245.275		

Source: Multiple Sources

The data aligns with findings from the Statistics Indonesia, which indicate a consistent upward trend in Indonesia's population over time. The first population census conducted by the Dutch East Indies government in 1930 recorded a population of 60.7 million people across the archipelago. In 1961, following Indonesia's independence, the census revealed a population of 97.1 million. By the 1971 census, the population had grown to 119.2 million, and in 1980, it reached 146.9 million. The 1990 census recorded a population of 178.6 million, while the 2000 census showed an increase to 205.1 million. The 2010 census reported 237.6 million people, and by the most recent census in 2020, the population had risen to 270,203,917 (Statistics Indonesia, 2022).

Population size can be a vital asset for development, but it can also pose challenges. A large population, when coupled with high quality in terms of education, health, and adaptability, can drive and support development efforts. However, if the population is large but lacks these qualities, it can become a burden and hinder development progress.

The increasing population leads to a heightened demand for essential needs such as shelter, food, clothing, employment opportunities, health services, educational facilities, and other public amenities. This demand arises because the population

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engages in various activities related to their relationship with God, with other individuals, and with the surrounding environment—including land, water, air, plants, and animals—in pursuit of improved well-being. Consequently, the relationship between the population and nature is deeply interconnected, as humans rely on nature for sustenance, and nature, in turn, plays a crucial role in determining human life, particularly in providing food. Alongside the challenges posed by rapid population growth, another significant issue is the uneven distribution of population growth across different regions of Indonesia.

RESEARCH METHOD

This literature review was systematically conducted through data collection, interpretation, identification, recording, and analysis. The approach was executed objectively, analytically, and critically to explore the impact of high population growth rates on environmental conditions in Indonesia. The preparation for this study followed the standard procedures of research, with the primary difference being the method and source of data collection. Data were gathered from library resources, involving the reading, identification, recording, and processing of research materials from multiple articles relevant to the study's focus.

To achieve objective results concerning the impact of high population growth rates on environmental conditions in Indonesia, this literature review involved an in-depth analysis of secondary data. These data were collected from various sources, including research articles, journals, internet sites, and other materials pertinent to the study's metrics. The analysis technique employed was content analysis, which entailed a structured examination of the data. This process began with an analysis of the most relevant research findings, followed by those that were relevant and then those that were somewhat relevant. The analysis was further organized chronologically, starting with the most recent studies and progressing backward in time. Abstracts of each research finding were reviewed to assess their relevance to the study's topic. The researcher then identified and noted parts of the research that were particularly pertinent to the study's objectives.

RESULTS AND DISCUSSION

Based on the research results, various problems resulting from the high population growth rate were identified and explained as follows.

1. The Impact of Population Growth on Population Welfare

The high birth rate has led to rapid population growth, which, if not

accompanied by adequate education, can result in low levels of knowledge and creativity among the population. This lack of educational advancement diminishes the competitiveness of the workforce in securing employment. Additionally, the creation of job opportunities becomes challenging due to the population's low skill levels and lack of specialized expertise, leading to increased unemployment and a rise in poverty. A study by Putri and Nurwati (2021) found that despite rapid population growth in Indonesia, there has been no significant improvement in community welfare. In fact, this trend may lead to a long-term decline in welfare, resulting in an increase in the number of people living in poverty. This condition has led to the exploitation of children by their parents as a means of generating income.

These findings align with those of Yunianto (2021), who demonstrated a significant positive relationship between population growth and economic growth in Samarinda. According to this study, an increase in population growth drives economic growth in the region. However, contrasting perspectives are presented by Azulaidin (2021), who argued that population growth is a balancing process that influences the dynamics of population components, both increasing and decreasing the population. Azulaidin concluded that economic growth is not

adversely affected by population growth, provided that population growth is supported by the population's capacity to enhance production and consumption, ensuring the smooth circulation of the economy.

In another study, Sembiring, Masinambow, and Tumangkeng (2023) revealed a negative and significant impact of population size and education level on poverty in cities within West Java Province. Conversely, the unemployment rate was found to have a positive and significant effect on poverty. Together, population size, education level, and unemployment rate collectively influence poverty levels in these cities. Based on these findings, it can be concluded that the rate of population growth has a significant impact on the welfare of the population.

2. Higher Potentials of Social Conflicts

A large and growing population increases the potential for clashes of interests among various social groups, which can escalate into significant conflicts with implications at both regional and national levels. In Indonesia, such conflicts frequently arise within society, involving both teenagers and adults, and spanning from ordinary citizens to those in the upper class. These conflicts often result in substantial losses, some of which have national repercussions, while others lead to the loss of life.

A study by Putri and Nurwati (2021) found that rapid population growth in Indonesia has led to an increase in poverty, which in turn has contributed to a rise in crime, as individuals resort to desperate measures to meet their daily needs. Similarly, Thayer A. Bradley's research on the relationship between war and population dynamics highlights that population growth and decline can significantly influence the occurrence of conflict. Rapid changes in population can disrupt the balance of power within a region, directly contributing to conflict.

The above discussion illustrates that population growth tends to provoke conflict and competition, particularly in the pursuit of resources, if it is not accompanied by corresponding growth in productivity and is not mitigated by robust institutional frameworks. Concerns that population pressure may lead to violent conflict are longstanding, dating back to Malthus (1798). Population growth can indeed trigger conflict, especially when combined with resource scarcity and when the state's capacity to manage differing opinions is limited.

3. Intensified Competition in Labor Market

In addition to the potential for conflict, a significant issue arising from a large population is the challenge of

providing sufficient employment opportunities. As basic necessities drive the need for people to work and earn a living, the limited availability of job opportunities exacerbates this situation. The high birth rate in Indonesia has contributed to a rapidly growing population, intensifying the demand for employment and basic needs. Compounding this issue is the tendency of individuals to rely on existing jobs rather than creating new employment opportunities, leading to fierce competition among job seekers. This, in turn, has resulted in a rise in unemployment across the country. Research conducted by Rohani (2012) indicates that high population growth in a region leads to an increased demand for employment, ultimately resulting in higher unemployment rates. The growing unemployment also elevates the dependency ratio, placing a significant burden on the state. This burden can impede development efforts and contribute to rising poverty levels.

4. Increased Competition for Housing

The rise in population, driven by high birth rates, leads to a shortage of adequate habitable housing. This shortage intensifies competition for decent housing, particularly in densely populated urban areas. However, not all individuals are affected by this competition equally; many prefer to remain in their long-standing

residences, which have been occupied by their families for generations, rather than seeking new housing options. The demand for housing and space is crucial, yet it must be balanced with concerns related to environmental issues such as the preservation of river basins, water catchment areas, agricultural land, and natural resource management.

Research by Makarau Vicky H. highlights that a persistent issue associated with increasing population is the growing demand for land, both for residential purposes and other activities. Given that land is a finite natural resource and human needs continue to expand, the availability of land becomes increasingly scarce and is often treated as a valuable economic commodity. This study underscores that as the population increases, so does the competition for available housing.

5. Tighter Competition over Natural Resources

To address their diverse life needs, humans rely on natural resources. When the availability of these resources remains constant or decreases while the population continues to grow due to high birth rates, the potential for increased competition among individuals for these resources escalates. A larger population necessitates more space and resources, yet the land area remains unchanged. Furthermore, the critical issue of resource provision and other essential

needs becomes more pronounced. The strain of population growth on the environmental carrying capacity presents a complex challenge. As Hutasoit (2023) noted, population growth can exert significant pressure on the environment's ability to provide adequate livelihood resources. Consequently, it is evident that population growth often intensifies competition for resources, particularly when it is not accompanied by corresponding increases in productivity and is not supported by robust institutional frameworks.

6. Lower Environmental Quality

A large population significantly contributes to various environmental issues and related challenges. Numerous instances of land conversion occur without adequate planning, leading to adverse consequences such as floods and landslides. These problems often stem from inappropriate land use practices, such as cultivating crops in unsuitable areas and deforestation without corresponding reforestation efforts.

The need for housing and infrastructure development is crucial, yet it intersects with environmental concerns, including the management of river basins, water catchment areas, agriculture, and the provision of natural resources. Both housing development and environmental conservation must receive equal attention to maintain ecological balance.

In addition to land conversion, environmental pollution has intensified due to increased industrial activity and the mismanagement of human waste. Soil pollution, a significant concern, arises from agricultural industrial waste that includes artificial fertilizers. These chemicals, when accumulated in substantial quantities, can pose serious risks to life by contaminating the soil in which plants grow and develop.

In addition to soil pollution, water pollution is a significant concern. Pollutants can contaminate water through various direct and indirect pathways, such as factory waste disposal, agricultural runoff containing pesticides, herbicides, and insecticides, among others.

The burgeoning population, driven by high birth rates or migration, also leads to increased congestion on roads, which contributes to traffic jams, higher crime rates, and other social issues. As the population grows, the demand for space and resources escalates, underscoring the necessity for meticulous planning in formulating policies to address the challenges associated with a large population in Indonesia.

Historically, the relationship between population and the environment was notably addressed by Thomas Robert Malthus in his seminal work, "An Essay on the Principles of Population" (1798). Malthus argued that while population

growth occurs at a geometric rate, food production increases at an arithmetic rate. Consequently, a population growth rate that surpasses the rate of food production could lead to food shortages. Malthus advocated for population control to ensure the availability of sufficient food resources. Although this perspective has faced criticism from many economists, it remains grounded in the observation that a larger population demands more food from the environment.

All human needs are sourced from the environment, making human survival contingent upon the environment's capacity to sustain life. Humans, natural resources, and the environment form an interconnected ecosystem that relies on mutual support. For human life to thrive, a balance must be maintained between the utilization of natural resources and the environment's carrying capacity.

This balance between population size and environmental carrying capacity is essential for achieving human well-being. It represents an ideal state of harmony, where the growth of the population aligns with the capacity of the natural, artificial, and social environments to interact optimally.

As human beings continually strive to enhance their welfare by meeting their ever-increasing needs, population growth significantly impacts the environment's carrying capacity. The rising number of

people exacerbates the strain on resources and environmental sustainability. Despite the availability of various natural resources—both renewable and non-renewable—the environment's capacity to support human life is finite.

Thus, it is imperative to shift away from a paradigm that overly emphasizes materialistic and positivistic aspects towards one that embraces environmental awareness and sustainability.

The root causes of environmental degradation are deeply intertwined with exploitative and consumerist behaviors, driven by an anthropocentric paradigm that positions humans as the central focus of the universe. This paradigm, coupled with a frontier mentality, fosters a belief in humanity's entitlement to exploit natural resources for personal gain. Such a mentality often manifests in highly individualistic behavior, driven by self-interest and characterized by indifference to environmental issues. Consequently, environmental studies tend to prioritize human profit over ecological well-being.

Moreover, behavioral changes within industrial societies have significant impacts on the environment. Historically, humans adapted their lifestyles to fit natural conditions. However, over time, human activities have altered biological communities in their habitats. The effects of these changes are more pronounced in

urban areas than in rural or forested regions. Since the era of industrialization, urban areas have seen the introduction of advanced technologies, whereas rural and forest populations remain smaller and lead simpler lives. The transformation of natural environments due to industrial activities yields both positive and negative consequences: while it provides benefits to humans, it also diminishes the environment's capacity to sustain human life.

The growing demand for housing exacerbates environmental issues, contributing to pollution and resulting in adverse effects such as flood, landslides, and other consequences of environmental damage.

CONCLUSION

The results of this research conclude that the high rate of population growth has had an impact on various aspects of the lives of residents in a region as follows.

1. High population growth affects the welfare of the population.

Population growth can positively affect the welfare of a community if it is accompanied by improvements in population quality. However, rapid population growth without corresponding enhancements in quality has not led to substantial gains in community welfare. In many cases, such unchecked growth has

resulted in deteriorating welfare levels and an increase in poverty.

2. Higher potentials of conflicts

Population surges often intensify competition for resources. Without concurrent increases in productivity and robust institutional mediation, the potential for conflict rises significantly. This risk is exacerbated when resource scarcity is combined with the state's limited capacity to manage divergent opinions.

3. Intensified competition in the job market

High population growth in a region leads to increased demand for jobs, which can result in elevated unemployment rates. This high unemployment rate, in turn, contributes to a higher dependency ratio, placing a significant burden on the country. This burden can impede development efforts and lead to rising poverty rates.

4. Tighter competition over housing

The growing population has led to a heightened demand for land, both for residential and other uses. As land is a finite natural resource and human needs continue to expand, its availability becomes increasingly scarce, driving up its economic value. Consequently, the rising population intensifies competition for land, particularly for settlement purposes.

5. Stronger competition over natural resources

Population growth can place significant pressure on the environmental carrying capacity, affecting the availability of livelihood resources. Without concurrent increases in productivity and effective mediation by strong institutions, this growth tends to escalate competition for resources.

6. Degradation of Environmental Quality

The continuous rise in the human population exerts increasing pressure on the environment, leading to a deterioration in environmental quality. This decline is further driven by exploitative and consumerist behaviors rooted in an anthropocentric paradigm that positions humans as the central focus and justifies the exploitation of natural resources for personal gain.

The expansion of residential areas and population movements have resulted in significant land conversion. Additionally, industrial growth and improper management of human waste have led to various forms of environmental pollution. Notable pollutants include soil contamination from agricultural and industrial waste, and water pollution from household and factory waste disposal.

Considering the large impact of the high population growth rate on various aspects of people's lives, various efforts need to be made as follows.

1. Population growth control

The ongoing increase in Indonesia's population has heightened government awareness regarding the need to control birth rates as a measure to manage rapid population growth. One key strategy for achieving this is the Family Planning (KB) program, which aims to promote smaller family sizes and ensure that the basic needs of family members are met, ultimately fostering prosperity. However, extending the reach of this program to remote areas remains a significant challenge that requires ongoing effort.

In addition to birth control, regulating the age of marriage is crucial for population control. Initially set by Law Number 1 of 1974 at 16 years for women and 19 years for men, the legal age of marriage was revised by Law Number 16 of 2019 to 19 years for both genders. Despite this, many families still seek to marry off teenagers below the legal age. Therefore, the government needs to implement measures to promote adherence to the legal age of marriage, such as raising awareness about the impacts of early marriage.

Increasing the minimum marriage age is vital for several reasons. From a health perspective, early marriage often poses

risks due to the underdevelopment of the female reproductive system, which can lead to various health issues. Furthermore, delaying marriage can reduce the number of children born by shortening the reproductive period, thereby contributing to a lower birth rate. Ensuring that adolescent girls remain in school is one effective way to delay marriage and reduce fertility rates, supporting broader efforts to manage population growth.

2. Efforts to improve community welfare

a. Guarantee for the fulfillment of community's living needs

The government is tasked with ensuring the fulfillment of the population's basic needs. However, given its limited capabilities, this goal remains challenging, leading to persistent issues such as food insecurity, the proliferation of slums, and high poverty rates. To address these challenges, the government has implemented social security policies designed to support the population. These measures include providing social assistance, health insurance, and education insurance, all aimed at improving the welfare of the Indonesian people.

b. Provision of employment opportunities

Creating and expanding job opportunities is crucial for enhancing community welfare. A shortage of available

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jobs hampers individuals' ability to secure employment, thereby contributing to poverty. Given the constraints faced by the government, it is essential to involve the private sector in addressing the employment gap. By encouraging private sector participation, more job opportunities can be generated, facilitating better employment prospects for the population and contributing to improved overall welfare

c. Improvement in education facilities

Education is both a fundamental right and a strategic approach to enhancing the quality of the Indonesian population. Expanding the number of educational facilities can increase access to schooling opportunities. Currently, insufficient educational infrastructure hinders efforts to achieve equity between rural and urban areas, as well as between different socio-economic groups. To address these disparities, it is essential to invest in improving school facilities. Increasing the education budget is a key measure to enhance educational infrastructure and support more equitable access to quality education.

d. Improved Health Facilities

Health facilities and infrastructure are crucial for improving the welfare of the population. The government has faced challenges in providing adequate health facilities and infrastructure, particularly due to financial constraints. Although there

have been gradual improvements in health service availability through various programs aimed at enhancing community health, significant gaps remain. Continued government attention is necessary to further develop health infrastructure, including the provision of essential equipment in remote areas, to ensure comprehensive healthcare access across the country.

e. Reducing Population Density with Transmigration Program

The transmigration program should be reinvigorated as a strategy to achieve more balanced population distribution and alleviate overcrowding in densely populated areas. By relocating residents from regions with high population density to less populated areas, this program can help reduce urban congestion and utilize underdeveloped land. As a result, previously idle land can be made productive, contributing to improved welfare and more equitable development across different regions.

f. Minimizing environmental pollution and environmental improvement efforts

Environmental pollution poses significant risks to life and well-being. To mitigate these impacts, it is essential to implement and enforce regulations on waste management. Additionally, efforts to restore the environment should include reforestation of degraded lands, Jurnal Registratie 6 (1), Februari 2024: 61-73

remediation of contaminated soils, and other restorative practices. These measures are crucial for improving environmental conditions and ensuring that ecosystems continue to support life effectively.

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