



## ***Population Development and Improvement of Education Infrastructure in Riau Province: A Case Study at the Regional Office of the Ministry of Religion in Riau Province***

### **Perkembangan Kependudukan dan Peningkatan Sarana Prasarana Pendidikan di Provinsi Riau: Studi Kasus pada Kantor Wilayah Kementerian Agama Provinsi Riau**

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#### **News Article**

<b>Keyword:</b>	<b>Abstract</b>
<i>Population Development; Infrastructure; Madrasa; Excellent and Dignified.</i>	<p><i>The population growth in Riau Province is increasing every year. This is in contrast to the existing educational infrastructure. Furthermore, the interest of students and parents in continuing education in Madrasah is also increasing. However, the growth rate of madrasah educational units seems to experience stagnation or zero growth. Therefore, this study aims to map the population growth in Riau Province and the available educational infrastructure for madrasah. This is important to achieve equal education as mandated by the law and to support the achievement of the Excellent and Dignified Riau Province Vision 2019-2024. The conclusion of this study provides a recommendation for the Regional Office of the Ministry of Religion in Riau Province to create a program for the establishment of madrasah at the district/city level. Furthermore, the equal distribution of educational infrastructure is also important to be one of the priority policies to achieve the National Education goals effectively.</i></p>

<b>Kata Kunci:</b>	<b>Abstrak</b>
<i>Perkembangan Kependudukan; Sarana Prasarana; Madrasah; Unggul dan Bermartabat.</i>	<p>Pertumbuhan penduduk di Provinsi Riau semakin meningkat dari tahun ke tahun. Hal ini menjadi antitesa dari sarana prasarana pendidikan yang ada. Lebih jauh lagi, minat siswa dan orang tua melanjutkan pendidikan kemadrasah juga semakin meningkat. Meski demikian, laju pertumbuhan penegarian satuan pendidikan madrasah seakan mengalami stagnasi atau <i>zero growth</i>. Karenanya, kajian ini bertujuan untuk memetakan pertumbuhan penduduk di Provinsi Riau serta sarana prasarana Pendidikan untuk madrasah yang tersedia. Hal ini penting guna mewujudkan pendidikan yang merata sesuai amanah undang-undang dan untuk mendukung tercapainya VISI Provinsi Riau Tahun 2019-2024 Unggul dan Bermartabat. Simpulan kajian ini memberikan rekomendasi agar Kementerian Agama Provinsi Riau membuat program Penegerian Madrasah di tingkat Kabupaten/ Kota. Selanjutnya, pemerataan sarana prasarana Pendidikan juga penting</p>

untuk menjadi satu dari sekian kebijakan prioritas agar tujuan Pendidikan Nasional dapat tercapai dengan baik.

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## INTRODUCTION

### Background of the Problem

Population growth is a crucial indicator for a country. From an economic perspective, population growth can impact a country's productivity and economic growth (Eni Heldayani, 2015). A larger population means a greater workforce. With continued population growth, many initiatives must be implemented to address this growing population. In line with global population growth, Indonesia, as a developing country, is also experiencing rapid population growth (Zulfa, 2016).

Mulyadi states that population growth is a dynamic balance between forces that increase and decrease population (Mulyadi S, 2002, p. 15). On the other hand, Bachrawi Sanusi states that significant population growth can reduce job opportunities and increase unemployment. Furthermore, this problem can ultimately lead to serious food security issues (Bachrawi Sanusi, 2004, p. 79).

In 2000, Indonesia's population reached 205,135 million, with a growth rate of 10,380 million, or 5.33% compared to 1995. On the other hand, the number of poor people fluctuated between 1996 and 2008 (Mustika, 2011).

Riau Province, a province in Sumatra, is showing even more rapid progress. Evidence of this progress is evident in the development of economic sectors such as industry, trade and services, mining, fisheries, agriculture, and plantations. This progress is supported by Riau Province's strategic geographic location, directly bordering the Strait of Malacca and ASEAN countries such as Malaysia and Singapore. Furthermore, vigorous infrastructure development and the availability of adequate information and telecommunications networks also contribute to Riau Province's progress.

From a population perspective, development in Riau Province has driven rapid population growth through increased birth rates and population migration, namely from 1,641,545 people in the 1971 Population Census to 6,330,941 in the 2015 Supas. Meanwhile, the growth in the number of lifetime in-migrants to the Province was recorded at 217.1 thousand people in the 1971 Population Census and 1.9 million people in the 2015 Supas.

Based on data from the Riau Province Statistics Agency (BPS), the population of Riau Province grew by 1.95% from 2020 to 2022, rising from 6,394.09 to 6,614.38. Concurrently, the school-age population also experienced significant growth.

However, the rapid population growth in Riau Province has not been matched by a corresponding increase in the number of state Islamic schools (Madrasah). As of 2022, there were only 84 state Islamic schools in Riau Province, spread across 12 regencies/cities, ranging from elementary to high schools.

Based on the above description, there are several issues that must be addressed in the Population-Based Development Policy in Riau Province, particularly by the Ministry of

Religious Affairs. These include: 1) Many school-age residents who are interested in attending public madrasas cannot afford to attend. 2) Inadequate supporting facilities and infrastructure available in public madrasas will impact student achievement in public madrasas. Therefore, this study aims to identify the school-age population interested in continuing their studies at public madrasas but lack the opportunity, either in terms of access or funding. Furthermore, this study also aims to determine efforts to equitably distribute supporting facilities and infrastructure to support student achievement in public madrasas.

This study provides at least some useful information, including answers to the question of whether interested school-age residents can be accommodated in public madrasas and whether student achievement can be improved with inadequate facilities and infrastructure.

## **Identification of the Problem**

1. Disparity in Population Growth Rate and Educational Infrastructure: The rapid population growth in Riau Province of 1.95% (2020–2022), driven by birth rates and in-migration, has not been matched by an adequate increase in the number of State Madrasahs (Islamic schools) to accommodate the surge in school-age students.
2. Limited Accessibility to State Madrasah Education: The limited number of State Madrasahs (only 84 units across 12 regencies/cities) results in a high number of school-age students who are interested but unable to access education at government institutions under the Ministry of Religious Affairs.
3. Economic Barriers to Fulfilling the Right to Education: There are groups of school-age students who are highly interested in pursuing education at State Madrasahs but are hindered by financial constraints (inability to afford the costs), thus hindering their right to a quality education.
4. Gap in the Quality of Academic Support Facilities: The availability of supporting facilities and infrastructure at State Madrasahs is currently considered inadequate, potentially hindering optimal student achievement compared to national education standards.
5. Challenges of Food Security and Unemployment Due to Population Explosion The long-term risks of massive population growth in Riau, if not managed through appropriate population-based development policies, have the potential to reduce job opportunities, increase unemployment, and threaten regional food security.

## **Formulation of the Problem**

1. How do rapid population growth and migration in Riau Province affect student capacity at public madrasas?
2. To what extent is the accessibility and economic affordability of educational services at public madrasas in Riau Province?
3. How does the availability of supporting facilities and infrastructure at public madrasas in Riau Province compare to the ideal needs for student achievement?

4. What population-based development policy strategies has been effectively implemented by the Ministry of Religious Affairs to equitably distribute madrasah education facilities across the 12 regencies/cities in Riau Province?

## **Objectives and Benefits of the Study**

### *Study Objectives*

1. Analyze the correlation between population growth and migration rates in Riau Province and the current capacity of State Madrasahs.
2. Identify barriers to access to education for the school-age population, both in terms of school availability and economic constraints.
3. Evaluate the adequacy of academic support facilities and infrastructure at State Madrasahs in Riau Province to support student achievement.
4. Formulate a population-based development policy strategy for the Ministry of Religious Affairs to ensure equitable distribution of State Madrasah educational facilities across 12 regencies/cities.

### *Benefits of the Study*

1. Theoretical (Academic) Benefits
  - a. Development of Population Studies: Enriches the literature on the relationship between demographic dynamics (births and migration) and public education infrastructure planning.
  - b. Scientific Reference: Serves as a reference for future researchers who wish to examine religious education policies within the framework of strategic regional development.
2. Practical Benefits (Policy)
  - a. For the Ministry of Religious Affairs: Serves as a consideration in decision-making regarding the construction of New School Units (USB) or New Classrooms (RKB) in areas with high population growth.
  - b. For the Riau Regional Government: Provides accurate data on the need for Islamic education facilities as part of the human development program in Riau Province.
  - c. For the Community: Opens advocacy opportunities for underprivileged populations to gain more equitable and quality access to education.

## **THEORETICAL AND CONCEPTUAL FRAMEWORK**

### **Theoretical Framework**

This theoretical framework uses a multidisciplinary approach that combines population theory, educational economics, and public policy.

1. Demographic Transition Theory (Warren Thompson): Used to analyze the shift in population structure in Riau due to high birth rates and in-migration. This theory

explains that rapid population growth demands a rapid response in the provision of public services (educational facilities).

2. Human Capital Theory (Gary Becker): States that education is a crucial investment in human resources for economic productivity. In this study, limited access to state Islamic schools (Madrasah) is considered a barrier to human capital formation in Riau Province.
3. Central Place Theory: Used as a basis for analyzing the distribution of state Islamic schools in 12 districts/cities. This theory emphasizes the importance of range and threshold to ensure equitable access to educational facilities for all levels of society.
4. Public Policy Theory (Implementation Model): Focuses on how ministry policies (Kemenag) respond to population data and translate them into concrete actions for educational infrastructure development.

## **Conceptual Framework**

This conceptual framework illustrates the flow of thought on how population variables influence educational infrastructure needs.

1. Input: Rapid population growth (births and migration) and an increase in the number of school-age children in Riau Province.
2. Process: Analysis of the availability of public madrasahs (84 units) and evaluation of the adequacy of current supporting facilities/infrastructure.
3. Constraints: Limited funding (community economic factors) and the uneven distribution of madrasah locations.
4. Output: Formulation of a population-based development policy strategy that is inclusive and equitable.

## **METHODOLOGY**

This study was written using descriptive research with an approach based on the emergence of variables, a non-experimental approach with a case study pattern. The data obtained were secondary data on the population from 2020 to 2022 and the number of State Madrasahs in Riau Province obtained from the Riau Province Central Statistics Agency and the Riau Province Regional Office of the Ministry of Religious Affairs.

## **ANALYSIS AND DISCUSSION**

### **Results**

#### *Educational Facilities and Infrastructure Planning*

The word "planning" originates from "plan," which means a plan or framework for future activities. Generally, planning can be defined as the process of carefully determining future actions to achieve specific goals. In the context of education, facility and infrastructure planning refers to the planning process that includes purchasing, renting, borrowing, exchanging, recycling, reconditioning/rehabilitating, distributing, or manufacturing equipment and supplies needed by the school. This process must involve key stakeholders within the school, such as the principal, vice principal, teachers, head of administration, treasurer, and school committee. This is necessary to invite input from

various parties and increase the maturity of the plan (Barnawi & Muhammad Arifin, 2017, p. 51).

A good plan always leads to predetermined goals and objectives, is based on calculations, and always includes activities/actions/efforts. The goal of planning is to collaborate to achieve predetermined goals. Effective planning must be conducted through a series of questions that need to be answered by elaborating on the following questions:

1. What

What activities must be carried out to achieve the established objectives?

2. Where

Where will the activity be carried out? This question includes the layout of the room, the location to be used, and the storage location for equipment and other supplies.

3. When

When will the activity be carried out? This indicates the priority system to be used, the time schedule, the targets to be achieved, the specific stages to be completed, and other time-related factors. Needs plans are created for the short, medium, and long term.

4. How

This question discusses the implementation methods that must be used to achieve the desired objectives. This includes the work system to be implemented, the standards to be met, the method for preparing and submitting reports, and the method for storing and processing documents that arise at the end of the implementation.

5. Who

This question seeks information about the identity of the people involved in an activity. This includes personnel information, division of tasks, authority, and responsibility.

6. Why

Philosophically, the most important question in this series of questions is "Why" because this question is directed at the five questions that precede it (Unknown, 2015).

Educational facilities are classified into three categories based on their nature: (1) their continued use; (2) their ability to move during use; and (3) their relationship to the teaching and learning process. First, educational facilities can be divided into two types based on their continued use: expendable educational facilities and durable educational facilities. Expendable educational facilities are materials or tools that can be used up within a relatively short time, such as chalk and certain chemicals used in teaching practices. Meanwhile, durable educational facilities are materials or tools that can be used continuously and for a relatively long time, such as school desks, typewriters, atlases, globes, and sports equipment.

Second, educational facilities are classified as movable and immovable during use. Educational facilities that can be moved or relocated according to the user's needs are called mobile educational facilities. Examples of mobile educational facilities include school filing cabinets and school desks. Planning for the procurement of movable assets is carried out in the following stages:

1. Compile a list of required equipment according to the school's activity plan.
2. Estimate the monthly cost of procuring these items.
3. Prepare a procurement plan for goods in the form of quarterly plans and then annual plans.

Meanwhile, educational facilities that fall into the immovable category include all educational facilities that are difficult or impossible to move, for example, buildings and land used as school sites. In procuring immovable goods, several planning stages must be followed, including:

1. Conduct a survey to determine the building renovation needs, including information on the building's function, organizational structure, number of users, and the amount of equipment to be used within it.
2. Calculate the required building area based on the survey results.
3. Prepare a budget plan adjusted to local standard prices.
4. Determine the technical implementation stages and create an adjusted budget plan, as well as estimate the annual budget allocated, taking into account the priorities established by the department.

Third, educational facilities related to the teaching and learning process can be grouped into three types: teaching aids, demonstration aids, and teaching media.

1. Teaching aids refer to tools used directly in the teaching and learning process, such as books, stationery, and practical equipment.
2. Teaching aids are educational and teaching aids, either in the form of actions or objects, that can help clarify concepts from the abstract to the concrete for students.
3. Teaching media are educational tools that function as intermediaries in the teaching and learning process, to increase effectiveness and efficiency in achieving educational goals. Commonly used teaching media include audio media, visual media, and audiovisual media.

According to Yudi (2012), educational infrastructure in schools can be divided into two types. First, educational infrastructure directly used in the teaching and learning process, such as classrooms, libraries, laboratories, and skills practice rooms. Second, school infrastructure that is not directly used in the teaching and learning process but significantly supports it, such as offices, the cafeteria, pathways and parking areas, bathrooms, the health room, the teachers' lounge, the principal's office, and so on.

### *Population Development*

The importance of strengthening population data and information, family planning, and community service (KBPK) is a strategic issue in population control. To effectively implement Population, Family Planning, and Family Development (KKBPK), programs and activities are required to be supported by accurate, valid, relevant, and accountable data and information from the National Population and Family Planning Board (BKKBN). However, the BKKBN faces challenges caused by the underutilization of accurate and up-to-date KKBPK data. One reason is the high complexity of the data and the use of local terms unfamiliar to practitioners, resulting in rare research and government programs that utilize KKBPK data for analysis. Therefore, efforts are needed to simplify information so that BKKBN data can be utilized optimally. (Raharja & Martini, 2015).

Riau Province, one of the provinces in Sumatra, is moving forward, as evidenced by development activities in economic sectors such as industry, trade and services, mining, fisheries, agriculture, and plantations. From a population perspective, development in Riau Province has triggered rapid population growth through increased birth rates and migration, from 1,641,545 in the 1971 Population Census to 6,330,941 in the 2015 Supas (Regional Population Survey). Meanwhile, lifetime in-migration to the province was recorded at 217,100 in the 1971 Population Census and 1.9 million in the 2015 Supas. Data from 2020 to 2022 shows that the population of Riau Province grew by 1.95%, from 6,394.09 in 2020 to 6,614.38.

To address these issues, an integrated system is needed that can interpret demographic data and regional conditions. To date, policy formulation has been fragmented and sectoral, with each sector having its own interests. To ensure the success of development programs, strengthened data collection and spatial mapping of supporting indicators are needed to inform policy direction.

To address demographic and development dynamics that are spatial in nature, Geographic Information Systems (GIS) can be used as a tool to assist in spatial analysis. Spatial data from the Family Planning and Family Development Program (KKBPK) can be processed and symbolized using GIS according to the data type, nature, and theme. GIS visualizations show the position of each data point and can provide more complex information about regional spatial patterns than tabular data analysis or trend graphs. However, data visualization in graphical form, data grouping, and trend analysis can be performed using GIS (Heldayani et al., 2018).

The Population, Family Planning, and Family Development Program (KKBPK) at the Regency/City level, in the era of regional autonomy, is indeed under the authority of the regions and is even a mandatory function, as mandated by Government Regulation No. 38 of 2007 concerning the Division of Government Affairs between the Central and Regional Governments. Regions have the flexibility to develop the KKBPK program to benefit the community. Indicators of the success of the KKBPK program can be seen from three aspects: first, controlling population quantity; second, improving population quality; and third, population mobility.

The Family Planning and Family Planning (KKBPK) program is implemented through the integration of population control policies into socio-cultural, economic, and environmental development (including population data and information management), the implementation of quality family planning programs (improving access to and quality of family planning services), family development (eight family functions, parenting patterns for the growth and development of children, adolescents, and the elderly), advocacy, information and mobilization of stakeholders, partners, and community participation (promotion and community mobilization), human resource development, research and development, and the quality of KKBPK program management. The KKBPK is needed as a policy, strategy, and optimal effort to utilize the demographic bonus opportunity, especially through efforts to achieve the targets/goals of the 2015-2019 Medium-Term Development Plan (RPJM).

Surapaty stated that the KKBPK roadmap includes 1) reducing the population growth rate from 1.49% (2000-2010) to 1.19% (2015-2020); 2) reducing the total fertility rate (TFR) from 2.6 children per woman of childbearing age (2015) to 2.3 children in 2019; 3) increasing the prevalence rate of contraceptive users (CPR) from 61.9% (2015) to 66.0% (2019); 4) reducing the number of unmet needs for family planning from 11.4% to 9.9% (2019); 5) reducing the birth rate among adolescents aged 15-19 years from 48 per 1000 women to 38 per 1000 women aged 15-19 years; 6) increasing the median age of first marriage for women (maturity at first marriage) from 20.1 years to 21 years (around

5% of married women are under 15 years old); 7) increasing knowledge about the Population, Family Planning and Family Development (KKBPK) program, 8) reducing the gap (disparity) in family planning services including its impacts, namely CPR, TFR, and UNMET NEED both between provinces, between village/city areas, and socio-economic status; 9) Strengthening institutional capacity for population, family planning, and family development at the central and regional levels; 10) Striving for a synergistic and harmonious legal and policy basis for KKBPK development with other development sectors; 11) Improving the availability and quality of accurate and timely KKBPK development data (Surya Candra Surapaty, 2015).

The development of the KKBPK program can be monitored through Routine Statistical Data Reports and periodic Family Data Collections. Evaluation is conducted through monitoring performance targets based on the agreed Provincial Performance Contract (KKP) to compare them with the planned targets, policies, strategies, and program activities. Evaluation of the KKBPK program's development is conducted using the Desk Descriptive Analysis method to obtain an overview of the analyzed data and information. Analysis of KKBPK program achievement areas with very extreme/irrational results requires follow-up through surveys, case studies, or integrated supervision (between related components) in the area in question.

## **Discussions**

The population dynamics in Riau Province, encompassing quantity, quality, distribution, and population databases, represent both opportunities and challenges that must be addressed to achieve successful development and education. Strong cooperation between the government, specifically the Ministry of Religious Affairs, and the community in addressing the population situation and conditions is needed in a serious and sustainable manner. One effort that has been implemented to control population growth is birth control, or the family planning (KB) program, through the Population and Family Development (KKBPK) program. Success in population control programs requires alignment between population control policies and other development policies, particularly those related to population quantity, quality, and mobility, to create harmony both vertically and horizontally.

Data analysis shows that population growth from 2020 to 2022 was 3.59%, while there were no additional State Madrasah Work Units. The school-age population of 5-9 years old grew by 0.85% from 2020 to 2022. The school-age population of 10-14 years old grew by 2.15% from 2020 to 2022. The school-age population of 15-19 years old grew by 0.70% from 2020 to 2022. Meanwhile, there were no additional State Madrasah Work Units.

Regarding State Madrasah facilities and infrastructure, several regencies and cities still do not have State Madrasah Work Units, such as the Meranti Islands Regency, which does not have a State Madrasah Ibtidaiyah Work Unit, and the Pelalawan Regency, which does not have a State Madrasah Aliyah Work Unit. Failure to meet the interests of parents and students in pursuing education at public madrasas will hinder the achievement of the Riau Province VISION for 2019-2024, namely:

- Excellence: Making Riau a leader in religious, cultural, artistic, and sports fields, as well as the best and foremost in innovation, public service, and governance.
- Dignity: Upholding the dignity of Riau Province to be a leader with integrity through the practice of religious values and the application of Malay cultural philosophy in the foundations of community life.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

Based on the analysis of the data obtained, with the increasing population and interest of parents and students in Islamic education, particularly at state madrasahs, while the facilities and infrastructure at state madrasahs are inadequate, the government, particularly the Ministry of Religious Affairs, is expected to meet these needs in order to provide educational services to the community and achieve the Riau Province VISION for 2019-2024.

The Riau Provincial Government has been rapidly building new state schools to accommodate the school-age population and provide educational services to the community.

### **Recommendation**

Based on the analysis, the following recommendations can be made:

1. The Riau Province Regional Office of the Ministry of Religious Affairs should immediately propose the nationalization of state madrasahs, which are still insufficient in number and lack district/city levels.
2. The Indonesian Ministry of Religious Affairs, specifically the Directorate General of Islamic Education, should approve the proposal to nationalize state madrasahs in Riau Province and increase its budget allocation.

This study is expected to serve as a consideration for policymakers within the Indonesian Ministry of Religious Affairs regarding budget allocations for Islamic religious education services for the population of Riau Province. Furthermore, it is expected to serve as a resource for other researchers interested in further research on the provision of these educational services.

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