Population Projection Calculation And Employment Conditions In Pekanbaru City

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ABSTRACT

The purpose of this study is to obtain information about future growth projections related to employment conditions in Pekanbaru City. The type of research used is quantitative descriptive research with a secondary data analysis approach. Data was obtained from BPS Pekanbaru City, in this case the secondary data used was the population data of Pekanbaru City in 2023. This study was conducted by calculating the population data of Pekanbaru City and presenting the results of the calculations as a finding, using the exponential projection method. The results of the study show that the population of Pekanbaru City has increased significantly every year. This is due to several factors, including the high rate of migration of Pekanbaru City residents, both from outside Pekanbaru City and from outside Riau Province. In terms of its geographical location, Pekanbaru City is in a strategic position so that many residents from surrounding provinces migrate to Pekanbaru City. Of course, this is also supported by advances in information technology, communication and transportation as well as smooth accessibility. Population growth will certainly be followed by growth in the number of working-age population. This growth in the working-age population will have an impact on employment conditions. Based on the analysis of population data in Pekanbaru City, it is known that the highest unemployment rate is from high school education level, which is 14,721 people, and the second rank is followed by S1 graduates, which is 9,577 people. From these data, it is known that the unemployment rate is dominated by educated unemployment.

1. Introduction

National development is a series of efforts and activities carried out by a country to achieve progress, prosperity, and positive changes in all aspects of people's lives. The main goal of national development is to create a just, prosperous, and highly competitive society. The importance of equitable development throughout the country so that all citizens can feel it in real terms is the main key to achieving national development goals.

The success of national development is determined by development policies. Appropriate and targeted policies can be the main driver in achieving the development goals desired by a country. In addition to the factors explained previously, the availability of labor also plays a very important role in supporting development. With sufficient labor, the implementation of development plans can run more efficiently and quickly. Labor is the main resource in the development process. With the availability of sufficient labor, economic activity can develop faster and increase competitiveness, which in turn will have a positive impact on better economic growth. Conversely, without adequate labor, economic activity can be hampered, resulting in slowing economic growth.

From the population composition based on age, it is known that most of the people of Pekanbaru City are in the productive age group, meaning that the population is concentrated in the working age group of 15-64 years. The availability of abundant labor must be balanced with the growth of job opportunities. If these conditions are not met, it will trigger unemployment. The

potential of the workforce is not fully absorbed due to limited job opportunities. The following is data on the unemployment rate in Riau Province:

Table 1.1 Unemployment Rate in Riau Province

Regency/City	Number of Unemployed		
	2020	2021	2022
Kuantan Singingi	8 376	3 291	3 998
Indragiri Hulu	10 571	7 291	5 450
Indragiri Hilir	15 782	9 685	5 141
Pelalawan	14 223	5 915	6 721
Siak	12 292	9 745	14 338
Kampar	23 911	16 797	14 219
Rokan Hulu	13 958	7 537	12 164
Bengkalis	24 518	17 910	18 227
Rokan Hilir	13 205	9 851	15 073
Kepulauan Meranti	7 475	4 060	5 048
Pekanbaru	47 521	44 503	36 513
Dumai	12 005	9 084	7 997

Source: BPS Pekanbaru City in Figures 2022

Based on the table, it can be concluded that Pekanbaru City is recorded as the area with the highest unemployment rate in Riau Province. In 2020, the number of unemployed was known to have reached 47,521 people, dropping to 44,503 people in 2021, and 36,513 people in 2022.

Unemployment is a central issue in modern society. If unemployment is high, resources will be wasted and people's income will decrease. In such conditions, the sluggish economic activity can also affect people emotionally and the daily lives of families. Unemployment is a problem in the economy because this condition can lead to a decrease in productivity and people's income, which in turn can lead to poverty and various other social problems.

To overcome the high unemployment rate, policies are needed that are in accordance with the employment conditions in Pekanbaru City. In knowing the employment conditions, it can be done through population projection analysis. Population projection is not a population forecast, but rather a scientific calculation based on assumptions from the main factors of population dynamics, such as births, deaths, and population migration (Mantra, 2011). These three factors determine the population and age structure of the population in the future.

Population projection analysis plays an important role in helping governments understand future population growth. By knowing the estimated population , labor needs in various economic sectors can be calculated. This allows for more effective planning to provide sufficient employment in line with population growth.

2. Method

The type of research used is quantitative descriptive research with a secondary data analysis approach. Data was obtained from BPS Pekanbaru City, in this case the secondary data used is population data and population growth rate of Pekanbaru City in 2023. This research was conducted by calculating the population data of Pekanbaru City and presenting the results of the calculations as a finding. By using the exponential projection method because this method produces a higher level of accuracy with the assumption that population growth continues due to births and deaths at all times.

Exponential Population Projection Formula:

$$P_t = P_o.e^{rt}$$

Keterangan :
Pt = jumlah penduduk pada tahun yang dicari
Po = jumlah penduduk pada tahun dasar
e = bilangan eksponensial yang besarnya 2,718281828
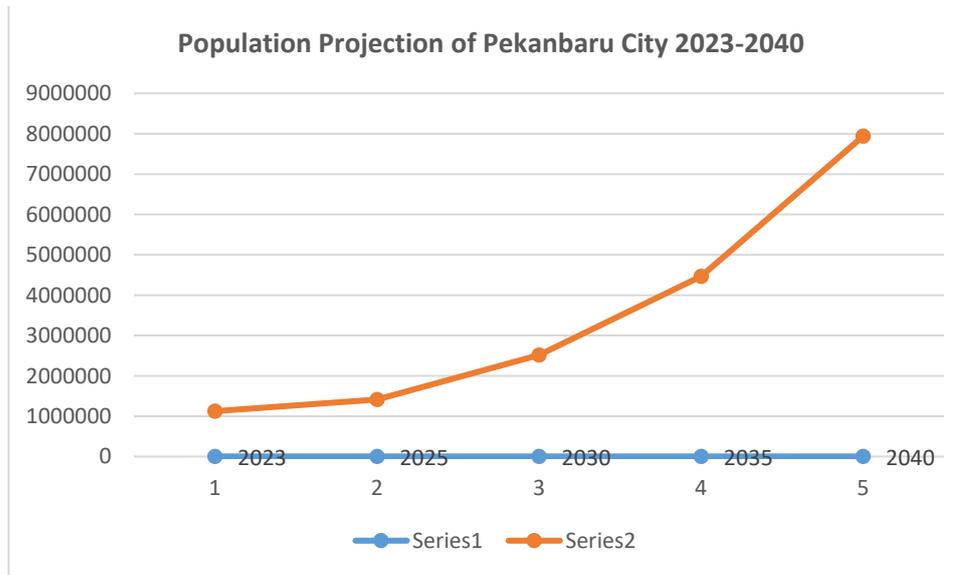r = laju pertumbuhan penduduk
t = jangka waktu

3. Results and Discussion

Population projection analysis of Pekanbaru City uses the exponential method, the reference in this analysis is the population data of Pekanbaru City in 2023 as the base year for the calculation because data for 2024 is not yet available. The following are the results of the population projection analysis of Pekanbaru City in 2023-2040:

Table 2. Population Projection of Pekanbaru City 2023-2040

No	Age	2023	2025	2030	2035	2040
1	0-4	87663	72081	44191	27092	16610
2	5-9	107242	164324	477573	1387967	4033837
3	10-14	108172	214424	1186239	6562519	36305196
4	15-19	78050	78765	80581	82439	84340
5	20-24	93678	118034	210342	374839	667982
6	25-29	94808	111909	169401	256429	388166
7	30-34	93580	114218	187980	309379	509177
8	35-39	92982	126628	274064	593164	1283803
9	40-44	91807	144153	445337	1375802	4250329
10	45-49	77615	96963	169145	295060	514709
11	50-54	65840	85952	167371	325912	634630
12	55-59	49864	55742	73649	97308	128568
13	60-64	35479	40263	55236	75779	103962
14	65-69	23270	23443	23883	24330	24786
15	70-74	12446	15120	24594	40006	65075
	75+	10852	18937	76176	306426	1232626
		1,123,348	1,413,885	2,512,834	4,465,946	7,937,124

Source: Secondary data processing

Based on the population projection data above, it is known that the population of Pekanbaru City has increased significantly every five years. Even in 2030, the increase in the population of Pekanbaru City will reach 2 times that of 2023, which is 2,512,83 people. This is due to several factors, including the high rate of migration of Pekanbaru City residents, both from outside Pekanbaru City and from outside Riau Province. The number of residents coming from outside Pekanbaru City in 2023 is 12,819 people, while the number of residents coming from outside Riau Province is 18,787 people. For more details, see the following table:

Table 3. Number of Residents Coming to Sub-districts in Pekanbaru City

No	Subdistrict	Coming between districts/cities	Coming between provinces
1	Payung Sekaki	808	1508
2	Tuah Madani	2687	3332
3	Binawidya	1333	1691
4	Bukit Raya	1235	1591
5	Marpoyan Damai	1683	2643
6	Tenayan Raya	1320	2242
7	Kulim	869	1097
8	Limapuluh	304	534
9	Sail	223	304
10	Pekanbaru Kota	151	289
11	Sukajadi	320	560
12	Senapelan	200	355
13	Rumbai	761	1410
14	Rumbai Barat	534	700
15	Rumbai Timur	391	531
	Pekanbaru	12,819	18,787

Source: Pekanbaru City in figures 2024

Pekanbaru City as the capital of Riau province has a strong attraction to be visited by residents from various regions. The many job opportunities in Pekanbaru City are a magnet for job seekers to seek their fortune and settle in Pekanbaru City.

Pekanbaru as the capital of Riau Province has a population that continues to grow. This population growth creates high demand for various products and services, thus providing great opportunities for MSMEs to grow, which of course these MSMEs need employees for the continuity of these MSMEs.

The number of MSMEs in Pekanbaru is the largest compared to other regencies/cities in Riau Province. According to data from the Riau Cooperatives and MSMEs Service, Pekanbaru has 68,728 MSMEs, placing it in first place. The second position is occupied by Kampar with 45,446 MSMEs, followed by Inhil with 44,891 MSMEs in third place. Furthermore, Bengkalis has 42,029 MSMEs, Rohil 34,036 MSMEs, Rohul 27,074 MSMEs, Inhu 26,488 MSMEs, Siak 22,948 MSMEs, Kuansing 21,450 MSMEs, Dumai 20,782 MSMEs, and Pelalawan is in last place with 13,824 MSMEs. These MSMEs are spread across all regencies/cities in Riau.

When viewed from its geographical location, Pekanbaru City is in a strategic position so that many residents from surrounding provinces migrate to Pekanbaru City, such as North Sumatra and West Sumatra. Of course this is also supported by advances in information technology, communication and transportation as well as smooth accessibility.

Not only that, as the capital city of Riau Province, Pekanbaru City has several quality higher education institutions, including state and private universities that offer various study programs. Universities in Pekanbaru City also offer many job and internship opportunities, especially in the oil and gas, plantation, and other industrial sectors. This gives students the opportunity to gain work experience during their studies , of course this is a special attraction for students from various regions to study in Pekanbaru City. Not infrequently after completing their studies, students choose to settle in Pekanbaru to work and other things. This also contributes to the population growth of Pekanbaru City.

In terms of fertility, Pekanbaru City has experienced a decline in the number of births. This is known from the composition of the population by age group, where the population aged 0-4 years has decreased. In 2023, the number of people aged 0-4 years was 87,663, while in 2025 it was 72,081 and decreased again in 2030 to 44,191. So it can be concluded that the fertility rate does not affect the increase in the population of Pekanbaru City.

As is known, population growth will certainly be followed by growth in the number of working-age population. The growth of the working-age population will have an impact on the employment conditions in an area, namely the availability of potential workers who will determine whether the area is advanced or not. This can have an impact on two things: increasing community welfare or increasing unemployment which leads to poverty. Increased welfare will occur if the working-age population is able to compete in the world of work, while increased unemployment will occur if the working-age population cannot contribute to the world of work. The following is data on the population aged 15 years and over according to the highest education completed:

Table 4. Number of Workforce Based on Education Level

Education	Work	Unemployment	Number of workforce
SD	49,177	2,047	51,224
JUNIOR HIGH SCHOOL	68,367	4.316	72,683
SENIOR HIGH SCHOOL	225,523	14,721	240.244
S1	121,000	9,577	130,577
Amount	464,067	30,661	494,728

Source: Pekanbaru City in figures 2024

From the table above, it is known that the highest unemployment rate is from high school education level, which is 14,721 people, and the second rank is followed by S1 graduates, which is 9,577 people. From these data, it is known that the unemployment rate is dominated by educated unemployment. The problem of educated unemployment when compared to non-educated

unemployment is actually more complex than the problem of educated unemployment. The job search process tends to be longer in the educated workforce group because they know more about the development of labor market information and are more capable of choosing jobs they are interested in and rejecting jobs they do not like (Sutomo et al., 1999).

The increasing trend of unemployment among educated workers is caused by the fact that the higher the level of education, the higher the aspirations to obtain a more suitable position or job opportunity (Wirosuhardjo, 1986;73). This can be interpreted that the higher the level of education, the longer it will take a person to consider the job offer received. Workers with higher education would rather be unemployed than do work that does not meet their expectations. This expectation is associated with the sacrifices made in order to obtain higher education. Added to this is the idealistic nature of job seekers , including in choosing a job, for example according to their desires, skills, hobbies, and educational *background* .

The current high number of educated unemployed people is further adding to the black record of education in Indonesia. College graduates who are expected to be able to increase the rate of economic growth, are instead the cause of the high unemployment rate. In fact, education is positioned as a means to improve welfare through better job opportunities. The problem of educated unemployment is a problem that until now has not been able to be resolved by the government. The problem of educated unemployment is an employment problem that must be resolved quickly in order to achieve people's welfare.

4. Conclusion

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