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FACTORS AFFECTING LIFE EXPECTANCY IN KUANSING REGENCY

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ABSTRACT

This research was conducted in Kuansing Regency, Riau Province with the aim of this study is to determine the influence of Economic Growth, Average Length of School and Health Facilities on Life Expectancy in Kuansing Regency. The type of research uses a descriptive analysis method with a Quantitative approach. Data carried out in a secondary way, namely data sources that are indirectly from the original source and are also collected specifically through BPS and the Kuantan Singingi Regency Health Office. Based on the results of the study, it can be concluded that the Economic Growth Rate/GDP, Average Length of School and Health Facilities to the Life Expectancy Rate has experienced significant growth in the Life Expectancy Rate in Kuansing Regency, we can see in the R2 Determination that the value is 0.887%, this also shows the contribution of the influence of independent variables on the dependent variable of 88.7% where the value of the range is at 0.80 – 1,000 which means that it is very strong in the Economic Growth Rate, Average Length of School and Health Facilities in Kuansing Regency and Based on the Problem Formulation that the influence of the relationship between the Economic Growth Rate and the Life Expectancy Rate is very significant, we can see in the T Test the Sig value of 0.001 means that the Economic Growth Rate has a Sig influence on the Life Expectancy Variable in the Regency Kuansing. Meanwhile, the influence of Average School Length on Life Expectancy Rate is both significant on the Life Expectancy Rate in Kuansing Regency, while the influence of Health Facilities in Test T has decreased by 0.096 which means that the Health Facility variable does not have a significant effect on the Life Expectancy Rate.

1. INTRODUCION

The population of Kuantan Singingi Regency based on data from the Central Statistics Agency of Kuantan Singingi Regency in 2015 was recorded as many as 314,276 people consisting of 161,377 males and 152,899 females. The most populous sub-district is Central Kuantan sub-district with 47,323 people and the least populated sub-district is Hulu Kuantan sub-district with 8,678 people.

Looking at the composition, the male population is more than the female population. The male population is 161,377 people and the female population is 152,899 people. The sex ratio is 105.54. The highest sex ratio is found in Pucuk Rantau District is 118.00 and the lowest sex ratio is in Pangean District at 99.18.

Kuantan Singingi Regency is located in the border area of 3 provinces, namely Riau, Jambi and West Sumatra Provinces. Administratively, Kuantan Singingi Regency is divided into 15 sub-districts,

11 sub-districts and 218 villages. The sub-district with the highest number of villages is Kuantan Mudik District, which is 23 villages and the least is in Pucuk Rantau District as many as 10 villages. The sub-district with the largest area is Singingi District (1,953.66 km2), followed by Singingi Hilir District (1,530.97 km2). Life expectancy is one of the indicators used to assess

the degree of health of the population (Felangi and Yasa 2021)

A high degree of public health can be used as an indicator of the success of health programs and socio-economic development programs which can indirectly increase life expectancy (Hasanah *et al*, 2021)

Health is a basic right of society which is one of the important aspects of the quality of human resources. Human resources (HR) who are physically and mentally healthy are expected to become quality human beings so that they are able to play an active role in development to realize the welfare of the people. One of the indicators used to assess the degree of health can be seen from the Life Expectancy Rate (Septianingsih 2022).

Dewi and Karim (2017) argue that the indicator of people's welfare can be measured by projecting the life expectancy rate, namely using the assumption of the infant mortality rate which tends to decrease. According to the Central Statistics Agency, the life expectancy rate is calculated based on the death rate by age whose data is obtained from death registration records over the years so that it is possible to make a death table. The Health Office said that the life expectancy is the average number of ages estimated in a person on the basis of the death rate at that time which tends not to change in the future. The United Nations Development Programme (UNDP) explained that the maximum value of life expectancy is 85 years and the minimum value of life expectancy is 25 years.

To give a clearer picture, the following is a table of Life Expectancy Figures in Kuantan Singingi Regency:

Table 1.1
Regency Life Expectancy Data Kuantan Singingi

Year	Expected Numbers Live
2013	67,64
2014	67,66
2015	67,86
2016	67,92
2017	67,99
2018	68,17
2019	68,64
2020	68,55
2021	68,60
2022	68,67
2023	**69,13**

Data Source: (Central Statistics Agency, 2023)

Kuantan Singingi has a Life Expectancy Value that increases every year, although the Life Expectancy in Kuansing continues to increase, but the Life Expectancy in Kuantan Singingi Regency is the third lowest after Meranti and Indragiri Hilir. and still below 70% where the standard life expectancy of Riau province according to BPS Riau province is 71.90 years. The low life expectancy in Kuantan Singingi district is certainly due to several factors.

In this study, the factors that affect the life expectancy in question are economic growth, average length of school, health facilities, in Kuantan Singingi district.

According to BPS, life expectancy can be used as an indicator in measuring the quality of the health of the population both mentally and physically. When describing the development of the socio-economic conditions of the community, one of the considerations is the high or low life expectancy. From this statement, it can be concluded that life expectancy is a quality that a person has in living life, as well as seeing the progress obtained during his life (Winston *et al*, 2022).

Furthermore, economic factors that occur among the community will show a person's ability to purchase power and show the income of each individual by obtaining a means of payment. Almost everything in the world requires a means of payment to

get it, whether it's clothing, food, or boards. Gross Regional Domestic Product (GDP) is one of the indicators to see equitable development. Equitable development will be followed by increased income, be it the goods or services produced. This is because the Gross Regional Domestic Product (GDP) is an indicator that describes the ability of a region to generate income or repay production factors in a region. Based on the theory put forward by Professor Kuznet, one of the characteristics of modern economic growth is high per capita output. The per capita economic growth in question is the GDP growth rate in Kuantan Singingi Regency, the high growth of the output economy makes consumption change in terms of the level of people's purchasing power. This means that the increasing economic growth will increase per capita output growth and change consumption patterns, in this case, will increase people's purchasing power. The high purchasing power of the community will increase the life expectancy because it also increases the purchasing power to meet the needs of the community. The life expectancy rate itself, which is a measure of health and success in the human development index, must require various costs to achieve it. Therefore, the economic factor of an individual or region is important. The income factor is very closely related to the ability of the community to access health services (Ardianti *et al*, 2015).

The high rate of GDP growth can increase a person's life expectancy. Life expectancy itself is a measure of health and success. Therefore, the economic factor of an individual or region is important. The income factor is very closely related to the ability of the community to access health services. If the growth rate of P=DRB increases, it indicates that the economy in an area will also increase, which of course will reduce the infant mortality rate and the life expectancy rate will increase (Kosat, 2020).

The following is a table of data on the GDP Growth of Kuansing Regency:

Tabel 1.2. Regency GDP Growth Table Kuantan Singingi.

Year	GDP Growth Rate ADHK
2013	5,47
2014	5,14
2015	-2,14
2016	3,89
2017	4,37
2018	4,66
2019	4,58
2020	1,01
2021	3,75
2022	4,75
2023	**2,87**

From the data above, it can be seen that the growth of ADHK's GDP in Kuantan Singingi district from 2013 to 2023 has fluctuated or fluctuated. The lowest economic growth in 2015 was -2.14.

Education is one way to guarantee and improve the quality of life of the community economically and socially, as well as to overcome disparities in order to achieve equality and realize a prosperous life (Wahyuni *et* al, 2023).

Education is another factor that affects life expectancy. Education has an important role in improving individual knowledge and helping individuals achieve their life goals. Not many people know about the importance of life expectancy itself, especially among people with relatively low education. Education is one way to guarantee and improve the quality of human life economically and socially, as well as as a way to overcome disparities in an effort to achieve equality and realize a prosperous life. Education and health are fundamental development goals. Higher levels of education will ensure continuous improvement in the level of technology used by society (Atmanti, 2005: 30-39). A person's education will be influential in responding to something that comes from

outside. With the higher level of education, it is hoped that it will be easier for a person to absorb, choose, adapt or develop all forms of new information and knowledge for their lives.

The indicator in education in question is the average length of schooling to reflect the success of long-term education programs, the role of the economy in determining life expectancy. The following illustrates the data of the Average School Length in Kuantan Sigingi Regency:

Table 1.3
Data on Average School Length in the District Kuantan Singingi:

Year	Average Duration School
2013	7,70
2014	8,17
2015	8,18
2016	8,19
2017	8,20
2018	8,31
2019	8,58
2020	8,59
2021	8,75
2022	8,76
2023	**8,90**

It can be seen that the Average Length of School in Kuantan Singingi Regency has increased every year, the Average Length of School (RLS) is defined as the number of years used by the population in undergoing formal education (Central Statistics Agency in 2013-2023).

Health development is one of the important agendas in realizing the Sustainable Development Goals (SDGs). This agenda will not be realized without the active participation of the community for a healthy and quality life (Aulele *et al*, 2017). The degree of health is one of the factors that greatly affects the quality of human resources, because the existence of healthy human resources will be more productive and increase human competitiveness and the competitiveness of a region. Development in the health sector to be achieved is a society that in the future is the community, the nation, and the state which is marked by The population lives within the scope and with healthy behavior, has the ability to reach quality health services fairly and equitably, and has the highest degree of health (Bangun 2019) It is undeniable that in health services to the community there is still a fairly acute dispaity due to the increasing difficulty of people getting access to adequate health services due to the low cost of reaching the lower class of society.

Health facilities are certainly also an important part of improving health outcomes for the community. The following is a table of data for Health Facilities

In supporting optimal health services, each local government needs to prepare supporting facilities and infrastructure ranging from cities to remote villages so that the goals of each local government in creating a healthy society can be achieved. The availability of the facilities and infrastructure referred to here such as health centers, hospitals, posyandu, and klikik.

The following is a table of health facilities in Kuantan Singingi Regency:

Table 1.4
Kuantan Regency Health Facility Data Singingi.

Known	Rumah Umum Hurtm	Rumah Sick Khus U.s.	U.S. Health Center	Clinic k	Health Facilities
2013	1	1	22	33	57
2014	1	1	24	35	61
2015	1	1	24	35	61
2016	1	1	25	36	63
2017	1	1	25	36	63
2018	1	1	23	36	61
2019	1	1	23	41	66
2020	1	1	23	39	64
2021	1	1	25	37	64
2022	1	1	25	37	64

2023	**1**	**1**	**27**	**37**	**64**

From the data above, it can be seen that the data on health services in Kuantan Singingi district from 2013 to 2023.of the number of health facilities available in Kuantan Singingi district, it turns out that their use has not been effective. There are still people who prefer to seek treatment at home and buy medicines at pharmacies.

According to a survey from the health office, the number of health facilities in Kuantan Singingi district has decreased due to the lack of the ratio of doctors handling at health centers, and many people in Kuantan Singingi district also trust traditional medicine media. Seeing conditions like this, there are several reasons why this happens, namely not having the cost of treatment, the cost is quite high.

According to one of the indicators that can describe the phenomenon of problems and strategic issues in the health sector in a region is the life expectancy (AHH). Life expectancy is often associated with the level of progress of an area, because in general, underdeveloped areas show low life expectancy and vice versa, developed areas show high life expectancy.

2. METHODS

This study uses a definitive analysis method with a quantitative approach. Descriptive research is research with a method to describe the results of a research. As the name implies, this type of descriptive research aims to provide descriptions, explanations, and validation regarding the phenomenon being studied. Quantitative research is a systematic investigation of a phenomenon by collecting data that can be measured using statistical, mathematical or computational techniques (Ramdhan, 2021). The type of data in the study is secondary data sourced from the central statistics agency (BPS) of Kuantan Singingi Regency and the health office of Kuantan Singingi Regency. The variables used in this study are Life Expectancy (Y), Economic Growth (X1), Average Length of School (X2) Health Facilities (X3).

This research was conducted in Kuantan Singingi Regency, Riau Province. Meanwhile, the time of this research is 2024 until completion.

The data collection from this study is carried out in a secondary way, namely data sources that are indirectly from the original source and are also collected specifically through BPS and the Kuantan Singingi Regency Health Office.

The data used is annual which covers the period 2013-2023. The data used by the researcher are:

1. Life Expectancy Figures
2. Economic growth
3. Average Length of School
4. Health Facilities

The data collection techniques carried out by the researcher are literature and internet methods. This is done by reading economics books, lecture materials that are in accordance with the topic taken and by looking for references on the internet.

3. RESULT AND DISCUSSION

Kuantan Singingi Regency is an Expansion Regency of Indragiri Hulu Regency which was formed based on Law Number

53 of 1999 concerning the Establishment of Pelalawan Regency, Siak Regency, Rokan Hulu Regency, Rokan Hilir Regency, Karimun Regency, Natuna Regency, Kuantan Singingi Regency and Batam City, with the Capital City of Kuantan Bay. The distance between Kuantan Bay and Pekanbaru as the capital of Riau Province Pekanbaru is 160 km. The administrative boundaries of Kuantan Singingi Regency are as follows:

1. The North is bordered by Kampar Regency and Pelalawan, Riau Province.
2. The South borders Jambi Province
3. The West borders West Sumatra Province
4. The East is bordered by Indragiri Hulu Regency, Riau Province

The Kuantan Singingi Regency area was originally several sub-districts under Indragiri Hulu Regency. Based on Law Number 53 of 1999, Indragiri Hulu Regency was expanded into 2 Regencies, namely Indragiri Hulu Regency and Kuantan Singingi. Currently, Kuantan Singingi Regency has become a definitive district that has 15 sub-districts.

Distance between the Regency Capital to the Sub-district Capital:

1. Teluk Kuantan – Lubuk Jambi : 22 Km
2. Teluk Kuantan – Lubuk Ambacang : 33 Km
3. Teluk Kuantan – Kampung Baru : 10 Km
4. Teluk Kuantan – Base : 70 Km
5. Teluk Kuantan – Muara Lembu : 35 Km
6. Kuantan Bay – Koto Baru : 52 Km
7. Teluk Kuantan – Koto Sentajo : 8 Km
8. Teluk Kuantan – Benai : 10 Km
9. Teluk Kuantan – Baserah : 36 Km
10. Teluk Kuantan – Koto Rajo : 45 Km
11. Kuantan Bay – Pangean : 30 Km
12. Teluk Kuantan – Perhentian Luas : 48 Km
13. Teluk Kuantan – Cerenti : 60 km
14. Teluk Kuantan – Inuman : 47 Km Based position geographically, Kuantan Singingi Regency has boundaries: North – Kampar Regency and Pelalawan Regency, South – Jambi Province, West – West Sumatra Province, East – Indragiri Hulu Regency.

Kuantan Singingi Regency in general has a tropical climate with rainfall in 2023 ranging from 60.21-652.71 mm per month.

Normality Test

- The Normality Test was created to determine the distribution of data in the variables that will be used in the study.
- The normality test of this research data uses the Kolmogorov – Smirnov Test

By policy-making based decisions *probability (Asymtotic Significance)*, which are as follows:

- If the Probability > 0.05 then the distribution of the population is normal
- If the probability < 0.05 then it is not normally distributed

Based on table 4.5 above, the Asymp value can be known . The Sig is **0.200c.d** and the Sig value is **0.853**, where the value is greater than > 0.05. So this shows that the data is distributed normally.

Heterokedacity Test

The Heterokedasticity test in this study was carried out by the spearman rank correlation test and the scatterplot test with the help of SPSS. If the significance of Unstandardized Residual (sig. > 0.05) means that there is no heterogeneity, and vice versa.

The results of the Heteroscedacity Test can be seen in the output on the *Scatterplot image*. It is clear that the point spreads above and below the 0 axis (zero) on the y-axis so there is no heterokedasticity of a regression mode. To be more convincing, it is also accompanied by other Heterokedaness Tests.

The results of the Heterokedacity Test that Based on table 4.2.1 above, Significant Values can be seen on all variables. The three variables have a Sig value of > 0.05 and it can be said that this shows that there is no heteroscedasticity in the regression model in this study.

Multicoleniaritas Test

The Hypothesis Test used in the Multicollinearity Test, namely:

- H0 : No multicollinearity occurs
- H1 : Multicollinearity occurs

Multicollinearity testing is carried out by paying attention to the value of Variance Inflation Factor

(VIF). If the VIF value > 10 or the Tolerance value is <

0.01, then the model has multicollinearity but if the VIF value < 10 or the Tolerance value > 0.01, then it is stated that multicollinearity does not occur.

Based on the table above, the VIF values of **1,015, 3,379, and 3,356** are in the range of values 1-10, meaning that there are symptoms of multicollinearity. Meanwhile, if you look at the tolerance value, you can see the tolerance values of X1, X2 and X3, which are **0.985, 0.296 and 0.298** > 0.10. That means that there is no multicollinearity symptom in all X variables against the Y variable.

Autocorrelation Test

The Autocorrelation Test aims to determine whether there is a correlation that occurs between members or observation data that is located in a row. To detect the presence of autocorrelation, the Durbin Watson (DW) test is carried out with the following conditions:

4.0 If the DW number is below -2, it means that there is a positive autocorrelation

4.1 If the DW number is between -2 and +2, there is no autocorrelation

4.2 If DW Above +2 mean There is a positive autocorrelation.

The Durbin Watson value in the Summary model is **1.763** So since **1.763** is between -2 and +2, it means that there is no autocorrelation.

Multiple Linear Regression Analysis

The multiple linear regression analysis aims to see the influence between, the GDP Growth Rate variable, the Average School Length variable and the Health Facilities variable on the Life Expectancy Rate.

Multiple Linear Regression Analysis Results

Equation Regression Linear Double is described as follows:

$$Y = 57{,}605 + 0.11X_1 - 1.414X_2 + 0.20 + \varepsilon$$

a. The coefficient regression of the X1 variable (GDP Growth Rate) was obtained at 0.11 with a positive coefficient sign. This means that the stronger the influence of the GDP Growth Rate, the higher the life expectancy rate. On the other hand, the weaker the influence of the GDP Growth Rate, the lower the life expectancy in Kuansing

a. The coefficient regression variable X2 (Average School Duration) was obtained at 1,414 with a positive coefficient sign. This means that the stronger the influence of the Average School Length, the higher the Life Expectancy Rate. On the other hand, the weaker the influence of the Average Length of School, the lower the life expectancy in Kuansing.

b. The coefficient regression variable X3 (Health Facilities) was obtained at -0.20 with a negative coefficient sign. This means that the influence of health facilities tends to be weak on life expectancy.

The results of this study show that economic growth in Kuansing Regency is enjoyed equally by the population in Kuantan Singingi Regency, especially in the field of Growth Rate, Average School Duration, but Health Facilities have decreased because they are in a negative number, which means that the influence of Health Facilities on Life Expectancy is still lacking attention by the government in Kuasing Regency. Thus, what can be obtained from the results of this study is that Health Facilities have a negative effect on the life expectancy rate in Kuantan Singingi Regency, which means that Health Facilities must be improved to

life expectancy. From this description, it can be stated that the number of Health Facilities in Kuantan Singingi district is one of the indicators that affect life expectancy.

Simultaneous Significance Test (F)

If the calculated f-value is greater than the f-value according to the table, then the alternative hypothesis, which states that all independent variables simultaneously have a significant effect on the dependent variable.

- Ho is accepted if F counts < F table or the sig value > 0.05
- Ho is rejected if F counts > F table or the sig value < 0.05

Based on the Simultaneous Test (F), a significant value of 0.001 was obtained where the value of the sig was 0.001 < 0.05, it can be concluded that Ho is accepted simultaneously there is an influence of variable X on variable Y. From the data of the table above, it can be seen that the value of **the Simultaneous Test is 0.001b**, which means that in the simultaneous test there is an influence of variables X1, X2, X3, on variable Y.

T Test Remotely

This Partial Test (t-test) aims to find out how much influence the independent variables (X1, X2 and X3) have on the dependent variable (Y) assuming that the other variables are constant. The tester was carried out in 2 directions (2 ropes) with a confidence level of 95% and a significant level of influence was tested

relationship variable independent (X_1) in

significance **0.001** means that if the significant value < 0.05 then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

While ***the Average School Duration,*** less than **0.055** means significant < 0.05, then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

And ***the Health Facility*** is significant **0.096** meaning, If the significant value > 0.05 then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable does not have a significant influence on the dependent variable.

1. Discussion on the Effect of GDP Growth Rate (X1) on Life Expectancy in Kuantan Singingi Regency (Y)

Based on the results of the analysis, we can see (X1) The GDP Growth Rate is significant 0.001, meaning that if the significant value < 0.05, the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant positive influence on the dependent variable.

Thus, what can be obtained from the results of this study is that the GDP growth rate has a significant positive effect on the number of

life expectancy in Kuantan Singingi Regency

individual variable dependent variable (Y), where the significance level is determined by 5%.

Based on the t-test data above, we can see that the influence of the independent relationship (*GDP Growth Rate, Average Length of School and Health Facilities*) on the dependent variable (Y or *Life Expectancy Figure*), with a significant level determined at 5%. So we can see (X1) ***GDP Growth Rate***

This means that an increase in the percentage of GDP growth rate will lead to an increase in life expectancy. From this description, it can be stated that the GDP growth rate in Kuantan Singingi district is one of the indicators that affect life expectancy. The relationship between economic growth and life expectancy.

The results of this analysis are in accordance with the theory (UNDP: 2009) that increasing economic growth of GDP will increase people's productivity and will increase life expectancy, and vice versa.

Economic growth can have a significant influence on the life expectancy of a population. In general, stable economic growth tends to increase life expectancy for various reasons such as,

Access to health services High economic growth often means more resources are available for investment in health infrastructure, such as hospitals, health centers, and other health facilities. This improves the accessibility and quality of health services for the community. (Kosat, 2020). This result is in accordance with previous research by Rita Herawaty Bangun (2019) which stated that the variable GDP growth rate or economic growth has a real effect on the life expectancy in Mandailing Natal Regency. This is because the betterment of the economy of a region will increase the ability of the community to access health services and reduce the death rate.

2. Discussion on the Influence of Average School Length (X2) on Life Expectancy in Kuantan Singingi Regency (Y)

The average length of school in Kuantan Singingi Regency has a significance value of 0.001, meaning significant < 0.05, then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

Thus, what can be obtained from the results of this study is that the average length of schooling has a significant positive effect on the life expectancy rate in Kuantan Singingi district means that the increase in the average length of schooling will lead to an increase in life expectancy. From this description, it can be stated that the average length of school in Kuansing district is one of the indicators that affect life expectancy. Because education is one of the factors that affect the success of regional development programs. that the higher the level of education, the higher the public's awareness of the importance of maintaining health, which causes the life expectancy to increase. The higher the level of education, it is hoped that the easier it will be for people to receive and absorb information and knowledge to improve their quality of life. The relationship between the average length of schooling and life expectancy.

Not many people know about the importance of life expectancy itself, especially among people with relatively low education. Education is one way to guarantee and improve the quality of human life economically and socially, as well as as a way to overcome disparities in an effort to achieve equality and realize a prosperous life. Education and health are fundamental development goals. Higher levels of education will ensure continuous improvement in the level of technology used by society (Atmanti, 2005: 30-39). A person's education will have an effect in responding to something that comes from outside. With the higher level of education, it is hoped that it will be easier for a person to absorb, choose, adapt or develop all forms of new information and knowledge for their lives.

This result is not in line with previous research by Astri vonita, Sunlip Wibisono, Aisah Jumiati (2015) which stated that the variable of average length of school or has a real effect on the life expectancy in Jember Regency, in a study by Astri vonita the variable of average length of school has less significant effect on life expectancy in Jember district.

(Bangun 2019) states that the rate of economic growth in an area can show that people can meet their living needs evenly and are able to carry out their lives properly.

3. Discussion on the Influence of Health Facilities (X3) on Life Expectancy (Y) in Kuantan Singingi Regency.

Health Facilities are significant 0.044 meaning, If the significant value < 0.05 then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

Thus, what can be obtained from the results of this study is that Health Facilities have a significant positive effect on life expectancy in Kuantan singingi district, which means that the increase in Health Facilities will lead to an increase in life expectancy. From this description, it can be stated that the number of Health Facilities in Kuantan Singingi district is one of the indicators that affect life expectancy. The content of the research is in accordance with the theory from UNDP (2009) The relationship of health facilities to life expectancy, Good health facilities can increase life expectancy because they provide better access to medical services, early diagnosis, and timely treatment. With adequate health facilities, people can receive the necessary care to prevent and treat diseases, which in turn can prolong life and can improve the quality of life (Frederic, 2022) However, the results of this study are not in line with previous research, by (Rita Herawaty Bangun 2019) where in the previous study the variables of health facilities did not have a significant influence on the life expectancy in Mandailing Natal district.

Determination Test (R2)

To predict or predict variable X to Y is used, the determination coefficient (R^2) test with this R2 value has a range of 0 to < (0 < R2 < 1). The greater the value of R2 (closer to one) the better the regression result, and the closer to zero the overall variable cannot explain the bound variable.

It is known that in the regression model, the value of the R-square is **0.887**, which means that the multiple correlation between independent and dependent variables has **a Very Strong** relationship because it is between **0.80 - 1.000**. Therefore, it can be concluded that there is a very strong relationship between the GDP Growth Rate, Average Length of School and Health Facilities for the Life Expectancy rate in Kuansing Regency (Y).

Adjusted R Square, is an adjusted R Square , with a value of **0.887**, this also shows the contribution of the influence of independent variables on the dependent variable by **88.7%.** Adjusted R Square is usually used to measure influence contribution if in regression using more than two independent variables. Because this study uses

3 independent variables, so the influence of Adjusted R Square is Very Strong in showing the influence of independent variables on dependent variables in this study.

Correlation Coefficient Test (R)

In other words, the variables of GDP Growth Rate, Average Length of School and Health Facilities which have a Very **Strong category** on the Life Expectancy Rate in Kuansing Regency. The results of the calculation above show that the determination coefficient (r2) is **0.887,** meaning that the percentage contribution to the GDP Growth Rate, Average Length of School and Health Facilities is **88.7%,** meaning that it has a great influence on the Life Expectancy Rate with a high level of relationship. Meanwhile, other variables that are not included in this study are Standard Error Estimated at **0.195** This means that errors that can occur in the Life Expectancy Rate in Kuansing Regency are **0.195**.

4. CONCLUSION

1. Based on the results of the research in Chapter IV, it can be concluded that the Economic Growth Rate/GDP, Average Length of School and Health Facilities to the Life Expectancy Rate has experienced significant growth in the Life Expectancy Rate in Kuansing Regency, we can see in the R2 Determination that the value is 0.887, this also shows the contribution of the influence of independent variables on the dependent variable of 88.7% where the value of the range is at 0.80 – 1,000 which means very strong in the Rate of Economic Growth, Average Length of Schools and Health Facilities in Kuansing Regency.
2. Based on the Problem Formulation that the influence of the relationship between the Economic Growth Rate and the Life Expectancy Rate is very significant, we can see that in the T-Test the Sig value of 0.001 means that the Economic Growth Rate has a Sig influence on the Life Expectancy Variable in Kuansing Regency. Meanwhile, the influence of the Average School Length on the Life Expectancy Rate is both significant on the Life Expectancy Rate in Kuansing Regency, while the influence of Health Facilities in the T Test is Sig of 0.096 which means that the Health Facility variable is above < 0.05 which means that the Health Facilities are still weak in terms of Life Expectancy Rate. Based on the influence of Economic Growth, Average School Duration, and Health Facilities on Life Expectancy in Kuansing Regency can be said to be very influential, which can be seen in table 4.4 which means that the value range is 0.80 – 1,000 which means that it has a great influence on the Life Expectancy Rate with a very high level of relationship.

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