

## **Contribution of the Force Labour, Education Level, Human Capital and Investment on Economic Growth in District of Badung**

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**Abstract:** An effort to realize increased prosperity can be seen from the economic growth achieved through development by local governments. Higher economic growth can create an increase in public demand for goods and services must be balanced by the supply side. Increased demand will increase investment and expansion of employment which in turn creates a balance of new, higher wages, thus creating higher welfare. This study aims to analyze the contribution of the labor force, level of education, human capital and investment to economic growth in Badung. Understanding the contribution of the determinants of economic growth, allowing to plan regional development policy to focus more on utilizing the resources of development in Badung to improve the performance of future economic growth. This study used a quantitative design with multiple linear regression analysis. The output of this analysis is the basis for policy making efforts to increase economic growth in Badung. The results showed that the workforce and human capital and no significant negative impact on the economic growth of Badung Regency, education level workers but not significant positive effect on economic growth while investment and significant positive effect on economic growth Badung. The biggest contributors to the economic growth of Badung is domestic and Foreign investment.

**Key words:** Economic growth, labour force, level of education, human capital and investment, education, utilizing

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### **INTRODUCTION**

One important measure in determining the success of economic development is economic growth, represents a real impact on the government's development policies. Economic growth is closely related to the increased production of goods and services in the economy. Economic growth is an indication of the increased efficiency of a region in the use of limited resources. This concept is related to the ability of the region to innovate, or how effectively people require limited resources and make better use. This analysis allows the government to estimate the level of future consumption, encourage job creation, improved living standards and determine monetary policy.

The importance of economic growth can't be ruled out because the economy of a region need to continue to grow as the population continues to grow. If the rate of economic growth declined, the number of jobs decreased compared to the total labor force, so that poverty will rise

and decline of living standards because the resources are not used efficiently to accommodate the increased number of productive age population (Michael, 2014).

The importance of economic growth lies in the ability of a country to improve the welfare of the people compared to the previous period. This is to create unemployment and poverty levels remain low and the purchasing power of all income levels higher than inflation. Economic growth is measured by Gross Domestic Product (GDP) which measures the total income of everyone in 1 year (Gregory, 2007) (Fig. 1).

Badung Regency is a district that has the highest economic growth rates in Bali, it is the impact of tourism rule sector that contributing to economic growth. Badung economic growth in the last 5 years (2008-2012) was at 6.75%, a decline of economic growth in 2009 to 6.39 from 6.91% for 2008 but in the next three years continues to increase each year 2010 amounted to 6.48, 2011 was 6.69% and in 2012 amounted to 7.30%.

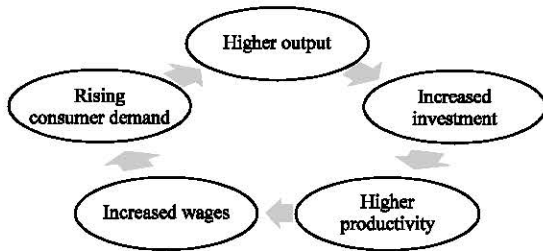


Fig. 1: Economic growth cycle (Geoff, 2012)

The consequences of high economic growth is Badung has an attraction for migrants, both derived from another district in Bali and outside Bali, especially, those from the region closest to Bali such as the island of Java, NTB and NTT to search work. Population growth rates in Badung is the highest among the nine districts/municipalities in the province of Bali which amounted to 4.62%, much higher than the average population growth of Bali which amounted to 2.14% and in 2012 increased to 5.06%. According to Terry (2014) high population growth rate can be economic growth capital that has the education and skill levels are high but if do not have adequate education and skills will lead to a variety of social problems that undermined economic growth.

In terms of the level of education of the population aged 15 years who worked in Badung, dominated by a high school graduate/equivalent which is equal to 42.267%, the second position is at 16.007% completed primary school, junior high school graduates for further 11.786% while graduate diploma in 1.2 and 3 amounted to 7.797%, diploma 4 and S1 and S2 of 10.031%/S3 at 0.679%. This means that the percentage of the population aged 15 years working with the top level of the new diploma to achieve a figure of 18.507%, much lower than junior high school graduates under which amounted to 27.793% (Turner, 2014).

Development program in Badung Regency has been running with a relatively high economic growth and it can not be separated from the role either in the form of domestic investment and FDI. Investment growth in the past 5 years 2009-2013 are likely positive but fluctuating, each of 206.234, 31.829, 14.758, 32.487 and 45.137%.

Badung government is also very concerned about education and health, it is seen from the growth of education and health spending as a proxy of human capital in the last 5 years but the positive tend to fluctuate over the period 2009-2013 amounting to 49.818, 0.409, 1.703, 61.331 and 38.016% (Badung in 2013 figures).

Level of relatively high economic growth has been able to reduce the number of unemployment in 2011

unemployment in the Badung Regency of 7213 people (2.30%) decreased to 5,094 people (1.60%) in 2012. During the period of 2011 and 2012 an increase in the labor force (15+), i.e., from 409 914 419 305 soul into the soul, on the other hand unemployment declines from 2.30-1.60% but the labor force participation rate of the working age population has decreased from 76.38-75.94. This means that an increasing number of labor force that does not work is greater than the labor force that works.

Based on this phenomenon, it is necessary to study the contribution of the labor force, education level of workers, human capital expenditures and domestic and foreign investment to economic growth in Badung.

**Literature review:** Economic growth is defined as growth in economic activity that led to the goods and services produced within the community grow and increase the prosperity of society (Sukirno, 2000). Economic growth measure achievement of the development of an economy through increasing a country's ability to produce goods and services. This increased capability caused by the increase of production factors both in quantity and quality. Investment will increase capital goods and technology used in the subsequent production process. Likewise, labor factors of production will increase as a result of population growth along with increasing their education and skills. Economic growth is one of the important indicators in analyzing the economic development of a country.

Theories that underlie this study are: first, classical economic theory by Adam Smith (Boediono, 1999) which states that economic growth is influenced by two main factors, namely the growth of output (GDP) and total population growth. The second is the Solow growth theory is the development of the Harrod-Domar formulation by adding a variable workforce as well as introducing technological factors. Solow (Michael and Smith, 2009) assumes a constant relationship between capital and labor as well as by including a variable output technology, technological advances led to the efficiency of labor grows at a constant rate, an increase in labor efficiency caused by two things namely population growth and productivity labor. Changes in technology to increase economic growth through enhancing the effectiveness of labor force growth.

The third is the new growth theory (endogenous), the sources of growth comes from an increase in the accumulation of physical capital and non-physical. Is non-physical capital is human capital in the form of science and technology. Based on this theory, the role of human capital investment is very important for economic growth in addition to physical capital. The development

of science and technology will develop the innovation, so as to improve labor productivity or improve the quality of human resources. This theory has three basic elements namely: endogenous technological change through the process of accumulation of knowledge to the creation of new ideas by the company as a result of spillover mechanisms and learning by doing and the production of consumer goods produced by the knowledge production function which grows without limit.

This study used a combination of classical growth theory, neo-classical and new growth theory (endogenous) as the basis of his theory in determining the independent variables that influence economic growth, namely: labor force based on the theory of Adam Smith, Samuelson, Lewis and Nicholson; the level of education of workers based on the new growth theory (endogenous); human capital investment by Solow neoclassical theory, endogenous growth theory, Samuelson, Romer and Mankiew, investments by the classical theory of Adam Smith, Todaro and Nicholson.

Based on the data and facts that have been described in the background, the purpose of this study was to determine the exact variables that contributed significantly to economic growth in Badung. Understanding based on the analysis of empirical studies are very important as a regional development policies, in particular to ensure the development of future policy direction to the high economic growth rate and quality, so it is important to know the contribution of strategic variables such as: the number of labor force engaged in the development, the number of people working with high school graduates and above, human capital and investment in the form of domestic and foreign investment. Furthermore, the purpose of this study is to analyze the contribution of the labor force, the education of the working population, human capital and investment to economic growth in Badung.

The results of this study are expected to provide the following benefits: for the academic world, an effort to develop and enrich the results of studies related to economic growth and the variables that influence it, for the relevant agencies, especially, the local government of Badung Regency, the results of this study will be very useful in improving economic growth, especially, directly related to the variables that are important and dominant influence on growth for the private sector (businesses), the results of this study are very important to know the investment opportunities in the District Badung as well as prepare for the quantity and quality of resources in support of investment planning in the future.

## **MATERIALS AND METHODS**

**Location and time research:** This research was conducted in Badung Regency in 2014. The data used are secondary data from 1994-2013 year quantitative and qualitative obtained from the relevant agencies, the BPS Bali, BPS Badung and the results of previous studies related downloaded from various journals over the internet.

**Research variables:** The variables identified in this study include: the dependent variable, namely economic growth, the independent variable, consisting of: labor force, level of education (proxied by the number of high school graduates and labor force equal to the top), human capital (proxied by investing in education and health) and investment (calculated from the value of domestic and foreign investment).

**The operational definition of variables:** The variables used in this study, further defined operationally as follows:

- Economic growth: is the relative change in the value of real GDP in Badung Regency in 1994 till 2013 at constant prices expressed in units of percent
- Labor force is the working age population (aged 15 years and over) whether working or not working (medium school, taking care of the household and unemployed) in Badung, in 1994 till 2013 is expressed in units people
- The level of education is the amount of labor employed in Badung in 1994 till 2013, a minimum of a high school graduate and equal to the above (based on the concept of Suryanto in the unit
- Human capital is the realization of the shopping areas of Badung Regency for education and health in 1994 till 2013 in units of dollars
- Investments is the realization of the value of domestic and foreign investments in Badung in 1994 till 2013 Rupiah expressed in units

**Methods of data collection:** The data required in this study, collected using the method of study documentation for the type of quantitative data whereas for quantitative analysis is also required to support the qualitative data from various sources related to this research, good literature and the results of related studies.

**Method of data analysis:** Analysis of the data using a quantitative approach to inferential statistical methods, analytical models used are multiple regression models

semilogarithma (Linlog). Estimation technique used is Ordinary Least Square (OLS) (Gujarati, 1995). The mathematical model of regression analysis is built are:

$$Y = \beta_0 + \beta_1 + \beta_2 AKLLHCPD + \beta_3 + \beta_4 LIV + e \quad (1)$$

Where:

- Y = Economic growth
- $\beta_0$  = Intercept
- $\beta_i$  = Regression coefficient
- L AK = Logarithma variable labor force
- L PD = Llogarithma education variable
- L HC = Logarithma human capital variables
- L IV = Logarithma variable domestic and Foreign investment
- e = Error term

### RESULTS AND DISCUSSION

**Descriptive analysis:** The average economic growth of Badung Regency for 20 years, i.e., from 1994-2013 amounted to 5.45%. The highest growth was in 1996 amounted to 9.10%. The high economic growth when it is the impact of national economic performance was very impressive especially during the time period 1994-1996, driven by the flow of capital inflows from abroad, either in the form of investment and Foreign loans, so that, Indonesia is known as the Asian economic tigers 2 after Japan, Singapore, Korea and Taiwan. Economic performance in 1996 Badung participate particularly high increase of the role of the tourism sector. But in July 1997 due to the contagion effect of the financial crisis that began in Thailand, then in line with the decline in the performance of the Indonesian economy experienced a period of crisis, economic growth Badung participate experienced a sharp decline which is equal to (-28.57%) to 6.50% in early 1997. The economic growth of Badung has

declined to the lowest point and reached the highest decrease of -176.31% in 1998, thus, achieving economic growth of -4.96% negative number, this condition is also known as the peak of the economic crisis in Indonesia which in turn lead to a multidimensional crisis.

Badung economic growth started to move positively to 0.50% in 1999, an increase from the previous period amounted to 111.49%. The increase was mainly driven by domestic consumption sector and the role of the informal sector and small and medium businesses that do not have a bond and debt obligations abroad. The 2004-2013 period is a period of steady growth which reached over 5%, in 2012 the economic growth has reached 7.30% in line with the movement of Indonesia's stable economic growth, especially, the success of the Yudhoyono administration are able to maintain macro stability national economy, although, some times world economic crisis as morgate in the United States and the Greek economic crisis that affected the whole of the EU but the Indonesian economic growth remained above 5%, so that Indonesia in 2012 became the state with the highest economic growth rate of the number two the world after China (Fig. 2).

Judging from the number of labor force in Badung during 1995-2013 showed an average per year of 230,228.45 people with an average growth of 3.40% per year. Lowest growth in 2001 is equal to -22.16% and the highest in 2010 amounted to 31.26%. Movement up and down the growth of the labor force in Badung is strongly influenced by the success of Family Planning (FP) and the conditions of economic growth. During times of economic crisis, since, mid-1997, then followed up during the reform period of the administration of President Yudhoyono in 2010, family planning programs do not receive adequate attention from the government, this is caused by the high temperatures that resulted in the abandonment of the



Fig. 2: Descriptive analysis 1995-2013 (%)

national politics of family planning programs. In addition, the growth of tourism in Bali so far has attracted residents from other districts in Bali and other islands in search of jobs including from Java, Lombok and Nusa Tenggara, these conditions increase the number of labor force who come to Bali. So, Badung is the region with the highest population growth in Bali which in 2012 amounted to 4.27% compared with Bali at 1.90% (Fig. 2). Likewise, the population density for the Badung also the second most populous after Denpasar Bali which is 1,382 inhabitants per square kilometer while Bali only by 710 people.

Viewed in terms of the number of workers with a high school education level up in Badung as a proxy variable of education level, shows the average rate of 2.79%, the highest growth rate in 2010 amounted to 33.92% while the lowest growth occurred in 2000 was -13.00% (Fig. 2). Fluctuating growth for the population of high school graduates and above, very related fluctuations in investment in 2010 the conditions of economic growth increased from the previous year at 6.48 into 6.69%, the growth is associated with a high level of investment in the same year ie from 2.1 billion in 2009 to 2.8 trillion in 2010. This growth will eventually be followed by higher employment opportunities, so that, the working population aged 15 years and above has also increased significantly, job opportunities is filled not only by the labor of Badung but the whole district in Bali including from outside Bali. The same was seen in the lowest growth in 2000 where the conditions for investment in the period were decreased from 217 billion in 1999 to 147 in 2000.

In terms of expenditures in education and health as a proxy for human capital variables during the period 1995-2014 (Fig. 2) showing an average growth of 59.87%. The highest spending growth in 1997, amounting to 580.33%. It is closely related to the demands of the reform era which was followed by the fall of the Suharto government. At that time there was a wave of student demonstrations with demands to pay more attention to the problem of education which previously did not receive serious attention from the government's new order. Lowest growth in Badung occurred in 1999 which amounted to -37.45%, this is due to a low budget to the government's reform era, especially as the impact of the economic crisis that hit Indonesia. In the next period as economic conditions improve, the growth of human capital spending again experienced high growth which, since, 2003 experienced significant growth leap where it is also due to the mandate of the act requires that education central and local governments to allocate budget for education 20% of the state budget/budget. In 2013 has reached more than 986 billion dollars or more than 4 times the average expenditure of human capital from year 1994-2013.

In terms of the amount of domestic investment and FDI, the average growth in investment during the period 1995-2013 in the Badung Regency of 50.57%. Investment growth is strongly influenced by domestic and global economic conditions. Investment growth in Badung reached negative numbers during the crisis period, ie., 1997 and 1998. Growth in investment reaching the lowest number in 1998 was -88.23% (Fig. 2). Investment growth in Badung showed good performance, since, the year 2008-2013, it is supported by macroeconomic conditions conducive Indonesia, although at the same time occurs several times the global crisis as mortgage in the US and European economic crisis but investors instead divert investments to some Asia countries that have relatively high growth rates including Indonesia. These conditions impact on increased investment in Badung, Bali as a center for Indonesian tourism development center.

#### **Inferential analysis**

**Normality and linearity test data:** Normality test data is used to ensure that the data used in the analysis entirely qualified normal distribution as required by the method of Ordinary Least Squares (OLS). Data normality test showed asymp value. Kolmogorov-Simimov Sig. is  $>0.05$ , or test results showed a non-significant, this means that all data is analyzed qualify normal distribution.

Linearity test data is used to ensure that data is analyzed qualified and all of the data are currently on the regression line, linearity test showed that all observational data of each of the variables studied no data outliers, it is seen from the entire value of the Z-score no bigger than the number 3 ( $<3$ ), meaning that all data be eligible linearity. Based on the test results of normality and linearity test, it can be concluded that all data normality and linearity qualify, so, it can be used in multiple regression analysis method of Ordinary Least Squares (OLS).

**Classical assumption test test violation:** The against violation test of classical assumptions include multicollinearity, heteroscedasticity and autocorrelation. Multicollinearity test aims to ensure there is no correlation between the independent variables, so that, the independent variables are orthogonal, the test was conducted using VIF. Heteroskedastisitas test to make sure the residual variance similarity from one observation to another observation, a good model is the residual variance is homoskedastis, the test was conducted using Glejser. Test classical assumption violation latter is the autocorrelation test, the aim is to ensure there is no systematic relationship between the residual (error term) periode period  $t$  with  $t-1$  autocorrelation test in this study conducted with test methods Breusch Godfrey. Results calculated with SPSS shows that the value of Variance

Table 1: Results of regression analysis

Models	Unstandardized coefficient (B)	Standardized coefficient (β)	t-values	Sig.
Constant	-21.7100		-0.470	0.650
LX <sub>1</sub>	-4.3110	-0.360	-0.550	0.590
LX <sub>2</sub>	4.2110	0.350	0.730	0.480
LX <sub>3</sub>	-0.4650	-0.390	-1.010	0.330
LX <sub>4</sub>	1.4760	0.710	2.270	0.040

Inflation Factor (VIF) for all independent variables, namely: Labor force (LX<sub>1</sub>), educational Level of workers (LX<sub>2</sub>), human capital (LX<sub>3</sub>) and investment (LX<sub>4</sub>), each amounting to 10469, 5594, 3621 and 2421, so, the variable LX<sub>2</sub>, LX<sub>3</sub>, LX<sub>4</sub> not contain multicollinearity while the value of 10469 LX<sub>1</sub>, meaning it contains very low autocorrelation degree, based on econometric criteria such conditions can be ignored.

Glejser heteroscedasticity test method showed that the entire value of the t test of each variable, namely the labor force, the education level of workers, human capital and investment demonstrates the value is not significant at 0.05 level, meaning that the model does not contain heteroscedasticity or model is homoscedastic.

Autocorrelation test to make sure there is no systematic relationship between the residual (error term) periode period t to t-1, the method Breusch Godfrey shows that the t-value of 0.241 or 0.081 for that Sig.>0.05 (not significant), meaning that there is no autocorrelation the estimation model by using LOS 0.05.

**Regression analysis:** This result analysis aims to answer the proposed research issues, namely: how the workforce contribution to economic growth in Badung? How the contribution of worker's education level (high school and above) to economic growth in Badung? How the contribution of human capital to economic growth in Badung? How the contribution of investment to economic growth in Badung? To answer all the problems of the study, it is done by multiple regression analysis with the model semilogarithma (ln log). The process of research data calculations performed with SPSS described (Table 1). Based on the calculations, the regression model estimation results as follows:

$$Y = -21.710 - 4.311LX_1 + 4.211LX_2 - 0.465LX_3 + 1.479LX_4 \quad (2)$$

The significance of the regression coefficient estimation results are as follows. The value of regression coefficient LX<sub>1</sub>-4311, meaning that there is no significant relationship between the negative and the labor force to economic growth Badung. The results of this analysis are not in accordance with the study of the theory of Todaro, Nicholson (1994), Adam Smith (Boediono, 1999),

Samuelson and Nordhaus (2001) and Sukirno (2000) which states that the labor force positive effect on economic growth. This is understandable because the labor force is the number of people aged 15 years and over, inside consists of the working population and that does not work, it means that the labor force is not fully involved in the production process. This is shown by the Labor Force Participation Rate (LFPR) in Badung is at 74.73% in 2012. While the rest is made up of people who are school, taking care of the household and the number of unemployed amounted to 25.27%.

The value of 4,211 LX<sub>2</sub> means the number of workers with a high school education up positive but not significant effect on economic growth Badung. These conditions correspond to the theoretical background used in this study, namely the theory of Terry (2014) and Nicholson (1994), Adam Smith (Boediono, 1999) that the labor involved in the production process an important influence on economic growth. This happens because economic growth is closely linked to the amount of labor that is directly involved in this case is the population who participated directly in the process of formation of added value, i.e., the working population.

The value of -0.465 LX<sub>3</sub> means spending on human capital and significantly negatively related to economic growth Badung. The results of this analysis differs from the theory underlying this study, the Romer endogenous growth theory (Michael and Smith, 2009), Samuelson and Nordhaus (2001) growth theory, Mankiew, Neoclassical Solow which states that human capital investment important influence on economic growth. In real terms, this condition is caused residents who work in Badung not entirely derived from Badung Regency but come from all over the district in Bali and outside Bali, human capital that supports economic growth in Badung is also a good contribution from other districts in Bali or outside Bali as the place of origin of the labor force. This means that labor gets a human capital investment beyond the Badung Regency but once it's ready to work they actually look for work in the Badung Regency of Badung economically profitable.

Value of 1476 means LX<sub>4</sub> domestic and foreign investment and significant positive effect on economic growth Badung. The results of this analysis in accordance with the theory underlying this study, that the positive effect of investment on economic growth among Terry (2014), Nicholson (1994), Theory Classical (Sukirno, 2000) and Adam Smith (Boediono, 1999).

The results of this study in accordance with the real conditions in the field which indicates that the role of investment in GDP structure Badung, especially in the form of gross domestic fixed capital formation, over the

last four years continued to increase significantly which in 2009 amounted to 24.89%, in 2010 increased to 27.23%, in 2011 increased to 30.53% and by 2012 had reached a figure of 34.69%. In neoclassical theory says that the higher employment increases the marginal product of capital and the incentive to invest. Higher output will increase its profit, the demand for housing and supplies are stored by the business, meaning that there is a positive interdependensi between economic growth and investment, consumption and income. This shows that the development in Badung Regency could not be separated from the role of investment, both from abroad and domestic.

Analysis of the standardized beta coefficients to determine which variable the greatest contribution to economic growth, the value of the beta coefficient for each  $LX_1$ - $LX_4$  and amounted to -0356; 0346; -0385 and 0709. This means that domestic and foreign investment have the largest contribution to economic growth in Badung. Economic growth in Badung long as it can not be separated from the influence of investment (domestic and Foreign), especially the tourism sector, namely in the sectors of hospitality, restaurant and tourism support and property sectors.

Analysis of the coefficient of determination shows the  $R^2$ -value of 0.394 and a significant F-test at 0.10, meaning that 39.40% of the variation of the labor force, education workers aged 15 years and above, human capital and investment can explain variations in Badung Regency economic growth while the rest of 60.60% of the variation is explained by other variables not included in the regression model.

### **CONCLUSION**

- Workforce and the negative impact of human capital investment have not significant effect on Badung economic growth
- Workers with high school education level and above have a positive influence but not significant effect to the Badung economic growth
- Domestic and foreign investment have a positive influence also significant to Badung economic growth

### **LIMITATIONS**

This study has limitations, including: the data used is the time series data from the years 1994-2013, the period of time during the 20 years occurred growth varies, mainly influenced by the variation of economic turmoil and political stability is influenced by both local and international, the influence of these dynamics are not

included as variables studied. The number of independent variables is limited to only four, so that the value of the coefficient of determination to be small because there are many variables that have not been included in the analysis model include: interest rates, foreign exchange rates, national economic policy, environmental, technological advances, infrastructure readiness, price commodities, inflation, political stability and global economic conditions. These variables theoretically have an important role to support economic growth.

The number of years of observation were also limited to the 20 years, the minimum requirement in the OLS regression analysis, it is caused by weak data base so that the process of collecting the data in trouble.

### **RECOMMENDATIONS**

To keep the economic growth in Badung remains high, the local government in order to keep the investment climate conducive to still be able to attract investment. Tips that need to be improved is the simplification of licensing, service bureaucracy, the application of strict law enforcement against violations of rules such as the violation of spatial and extortion which create a bad image of investment.

Badung economic growth should maintain the principle of high growth and quality, meaning how to create a high growth but does not increase the income gap between the richest group with the lowest income group. The solution offered is to increase production activity by SMEs in rural areas, rural areas generally have lower incomes than urban. SME development is integrated with the existing base potential in each village. Local governments facilitate the basic needs of SMEs and marketing, both domestic and export.

Badung government should aggressively build roads and parking lots, drains into public complaints and tourists as contributors transportation bottlenecks, this condition will be the anti-climax for tourists who visit Badung that can be ultimately undermine economic growth.

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