

# The Affecting Factors of Government General Fund Allocation in North Sumatera

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## Abstract

*The purpose of this study was conducted to obtain empirical evidence and analyze the Population Index (PI), Area Index (AI), Human Development Index (HDI), Construction Cost Index (CCI), Index of Gross Regional Domestic Product per capita at current price (IGRDP per capita at current prices), Original Local Revenue (OLR), Profit Sharing Fund (PSF) Taxes and Natural Resources as a factor influencing the amount of the General Allocation Fund (GAF). This study analyzed 33 local districts and cities in North Sumatra. The chosen area will be included as members of 25 local government districts. The observation is conducted over three years from 2006 to 2008. There are 75 units of observations. The quantitative data used in this study was obtained from the local government financial statistics report. Hypothesis testing was done by multiple regression analysis after the classical assumption of sample data. Research results show that the Population Index (PI), Area Index (AI), Human Development Index (HDI), Construction Cost Index (CCI), Index of Gross Regional Domestic Product, Original Local Revenue (OLR), Profit Sharing Fund (PSF) and Natural Resources simultaneously influence the amount of the General Allocation Fund (GAF). Partially while the Population Index, Index Area, regional real income, the Tax Sharing Fund and Natural Resources is the positive effect on the amount of the General Allocation Fund Index. The Gross Domestic Product per capita at current prices has the negative influence on the amount of Fund Allocations General. However, the Human Development Index and Construction Cost Index did not affect the amount of the General Allocation Fund.*

**Keywords**—Fiscal Need, Fiscal Capacity, General Allocation Fund

## I. INTRODUCTION

Granting full autonomy to the government in North Sumatra is according to initiatives and aspirations. Local government has been given full authority to the determination and implementation of regional development policy. The government has three core functions, distribution, stabilization, and allocation [1]. The distribution and stabilization function effectively and appropriately carried out by the government, while the allocation function is leading to the need, condition and situation of the

local community. The division of functions aims in establishing the basic principles of revenue sharing between the central and local governments.

The final goal from an economic standpoint is to bring people to the higher welfare. Reality shows, not all regions were able to escape from the central government because of the level of the needs of each region is different. In fact, the central government should be responsible for policy autonomy. It is not only seen in the context of the framework of political relations and local authorities, but is also seen in the relationship between central and local finances. Transfer from the central government is the main funding source for the city government to finance its main operations daily. Thus, independence for the region has not been fully implemented because they still depend on the flow of funds from the central government, especially DAU [6][9]. In this approach, it appears two main factors determine the amount of transfers from the central to local governments. The first factor is the load factor which is a function of the needs of the region. The second factor is the regional financial capability factor is the basic skills in finance functions (revenue capacity). The purpose of this transfer is to reduce the fiscal gap between government and ensure the achievement of minimum standards of public service throughout the region.

## II. RELATED WORKS

The government issued Government Regulation No. 104 of 2000 to balance the allocation of funds. The research conducted by Kustiawan [3] showed dissatisfaction with the formula that the Central Government. For example, the Government of Jember protested about the DAU; they received 300 billions, and when compared with the personnel expenditure is 275 billions, the DAU turns only to personnel. Bekasi Local Government protested to the Ministry of Home Affairs and Regional Autonomy because they receive 187.7 billions, whereas they expect to receive 250 to 800 billions.

In Republika dated 25 March 2000, the Secretary-General and the Director General of the Regional Government Ministry of Home Affairs and Regional Autonomy Sudarsono said that "The formula is the standard for the calculation of the allocation of public funds, but the Regional Autonomy Advisory Council will be re-evaluated on

the determination of the general allocation fund."

In Law No. 33 In 2004, DAU is a fund sourced from APBN allocated to bring equality among the region financial ability to fund the needs of the region in the implementation of decentralization. General Allocation Fund is a fund sourced from the state budget allocated aim to Equity Financial Capabilities Inter-regional through the application of a formula that takes into account the needs of personnel expenditures, Fiscal Needs, and Potential Areas. Fiscal Needs are used for DAU calculation approach to the needs of the area consists of index Population, total area index, the Human Development Index (HDI), Construction Cost Index (CCI), and the index of Gross Regional Domestic Product (GDP) per capita at current prices. While the Fiscal Capacity reflected from PAD, DBH and Natural Resources [2].

The development of general allocation funds that occurred in the City and District governments in North Sumatra given by the Central Government from year to year has increased, excluding the Asahan. DAU realization fluctuated from 2006, Rp.493.236.000.000. In 2007, it was Rp.546.637.000.000, and in 2008 was Rp.426.271.896.000. The decline in DAU realization in Asahan from 2007 to 2008 was Rp.120.365.104.000. From the attachment data, it is known that the realization of general allocation funds that are high in Medan. In 2008, it was up to Rp. 808.664.570.000, and the realization of General Allocation Fund was lowest for the West Pakpak District Government, in 2006, it was up to Rp. 127 756 000 999. It indicates that the City and District governments in North Sumatra are still dependent on central government transfers funds.

In Act 33 of 2004 on Financial Balance Between Central Government and Local Government, DAU aims to equalize fiscal capacity among regions. It reduces the ability of financial imbalances between regions through the application of a formula that takes into account the needs and potential of the region. DAU established based on the fiscal gap of an area which is the difference between the needs of the region (fiscal needs) and the potential of the region. This law reaffirms the fiscal gap formula and the addition of variable DAU. DAU allocation for regional fiscal potential is great but small fiscal needs would acquire relatively lower allocation. Instead, the local fiscal potential of small, but high fiscal need will receive a relatively higher DAU. Implicitly, the principle confirms DAU as fiscal capacity equalization factor. The cornerstone of the policy implementation is the government regulation No. 55 of 2005 regarding Revenue Sharing and as the enactment of the President of the General Allocation Fund Provincial, District and Municipal annually. The

provision establishes basic policies ranging from definitions to the DAU for a variable to be used as a foothold determination. DAU function is as an instrument to address the horizontal imbalance, which is allocated for the equitable distribution of financial capacity among the regions. Use of DAU determined entirely by the region and the financial ability to neutralize inequality with their local revenues, tax revenues and other results obtained for the regions [4].

### III. METHODOLOGY

The study used a dependent variable, the general allocation fund and seven independent variables (Population Index, Territory Area Index, Human Development Index, Construction Cost Index, GDP Index per capita at current prices, Local Revenue and Taxes and Natural Resources).

#### 1. General Allocation Fund

General Allocation Fund is a general transfer from the central government to 25 districts and cities governments to address the interests horizontal with the main purpose of fiscal equalization capacity among regions (calculated in billions of rupiah). The scale used is the ratio.

#### 2. Population Index

Population Index is the accumulation of all people who registered in 25 districts/cities are calculated based on gender (male and female) in a certain region and is calculated in units of million. The scale used is the ratio.

#### 3. Territory Area Index

Territory Area Index is the amount of area in 25 counties and cities in particular terrestrial realm. The scale used is the ratio.

#### 4. Human Development Index

Human Development Index is the level of welfare achievement on basic services in education and health in 25 districts/cities. The scale used is the ratio.

#### 5. Construction Cost Index

Construction Cost Index is a geographical difficulty level based on the level cost of physical infrastructure in relative terms between the 25 districts/cities. The scale used is the ratio.

#### 6. GDP Index per capita at current prices

GDP Index per capita at current prices is potential and economy activities of a district/city that is calculated based on the total gross production output in a region above the current price. The scale used is the ratio.

#### 7. Local Revenue

Local Revenue is the reception area which is derived from various sources and native richness

in 25 districts/cities. The scale used is the ratio.

8. Taxes and Natural Resources

Taxes and Natural Resources are the funds coming from the budget revenues are allocated to the districts/cities based on the percentage to finance the needs of the region in the implementation of decentralization. The scale used is the ratio.

PAD(in million)	75	2990	324000	30304	57097.9
DBH(in million)	75	12700	227000	45466	46104.6
DAU(in million)	75	128000	809000	348960	165790
Valid N (listwise)	75				

A. Descriptive Research Samples

The quantitative data used in this study is the Local Government Finance Statistics Reports of the regencies/cities in North Sumatra (APBD Realization Report), budget realization report in 2006 to 2008 and North Sumatra data in figures, to three years of observation. The objects of research are Population Index, Region Index, Human Development Index, Construction Cost Index, Gross Domestic Product Index per capita at current prices, the realization of regional revenue, the realization of Taxes and Human Resources, the realization of General Allocation Fund.

Data were obtained from the library of the Central Statistics Agency (BPS) of North Sumatra and the Ministry of Finance of the Republic of Indonesia, accessed through the website of the Directorate General of Fiscal Balance (<http://www.djpk.depkeu.go.id>). The population of 33 regions, comprising 25 districts and eight cities in the province of North Sumatra. Among the 33 districts/cities that meet the criteria of completeness of the data into the appropriate sample members who meet the criteria (purposive sampling) is as much as 25 districts/cities. It consists of 18 districts and seven cities in North Sumatra province, (excluding the autonomous regions in 2007) and has a complete report data in this study.

B. Descriptive Statistics Data Research

Based on cross-section data, there are as many as 25 districts/cities with time series as much as three years of observation of the obtained samples of 75 units with a descriptive statistical analysis of research data. The following table shows the descriptive statistics.

Table 1 Descriptive Statistic

Variable	N	Min.	Max.	Mean	S. Dev.
IJP (in %)	75	.07	4.28	.9997	.99744
ILW (in %)	75	.00	4.29	.9999	100.517
IPM (in %)	75	.90	1.06	.9997	.03643
IKK (in %)	75	.95	1.27	10.000	.07548
IGDP (in %)	75	.15	2.52	10.127	.43304

C. Classic Assumption Testing

The regression model in this study will be used to conduct forecasting a good model is the model with the forecasting errors to a minimum. Besides finding the most appropriate model, before the model in this study used should meet some classical assumptions, among others: normality test, multicollinearity, Heteroskedasticity test, and autocorrelation test. The regression model initially conducted classic assumption test in the form of a double log; all the classical assumptions are met except autocorrelation so as to avoid autocorrelation be a change in the form semilog regression models. Based on this, the classical assumption of normality test, multicollinearity, Heteroskedasticity test, and autocorrelation test has been with the regression model in the form semilog, as outlined below.

D. Normality Test

Test for normality in this study aims to test whether or residual confounding variables in regression models with the normal distribution. T-test and F-test assume that the value of the residuals should follow a normal distribution, and if this assumption is not met, then the use of the regression model for the prediction becomes invalid for small sample quantities.

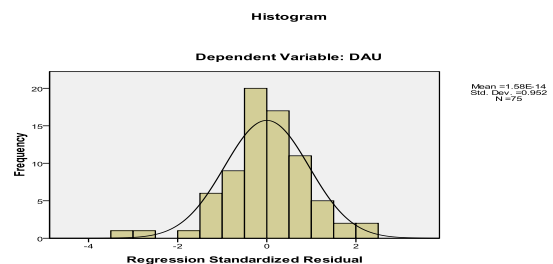


Fig. 1 Histogram

Normal P-P Plot of Regression Standardized Residual

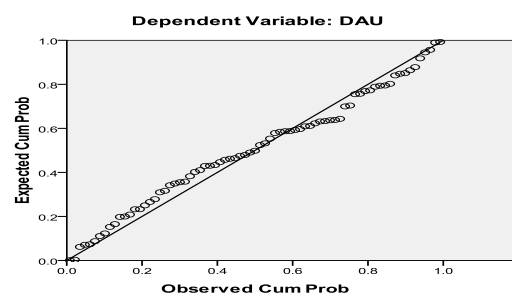


Fig. 2 Normal P-P Plot Of Regression Standardized Residual

In histogram graph, the data shows the distribution of the residual value normal distribution. It is stated in the picture is almost perfect bell-shaped (symmetrical). Likewise the norm probability plot, the data spread around the diagonal line and follow the direction of the diagonal line. It shows residual normal distribution, then the regression model to meet the assumption of normality. Statistical test for residual normality test in this study using a non-parametric statistical test of Kolmogorov-Smirnov (1-sample K-S Test).

**Table 2 Kolmogorov-Smirnov Test**

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		75
Normal Parameters <sup>a,b</sup>	Mean	.0008772
	Std. Deviation	52.819.910.900
Most Extreme Differences	Absolute	.083
	Positive	.083
	Negative	-.067
Kolmogorov-Smirnov Z		.720
Asymp. Sig. (2-tailed)		.678

a. Test distribution is Normal.  
b. Calculated from data.

From the statistical test Kolmogorov-Smirnov in Table 2, it resulted 0.678, and not significant at  $\alpha = 0.05$  (Asymp.Sig = 0.678 > 0.05), so the hypothesis  $H_0$  is accepted, which said the data were normally distributed residuals. Thus the regression model meets the assumptions of normality.

**E. Multicollinearity Test**

Multicollinearity test on this study aims to test whether the regression model found a correlation between the variables free (independent) on the model. A good regression model should not happen correlation between independent variables. Cutoff values that are used to indicate the absence of multicollinearity if tolerance value  $\geq 0.10$  or equal to  $VIF \leq 10$ .

**Table 3 Collinearity Statistics**

Model	T	Sig.	Collinearity Statistics	
			Tolerance	VIF
1 (Constant)	-7.747	.000		
LN_IJP	3.774	.000	.248	4.032
LN_ILW	2.660	.010	.455	2.200
LN_IPM	.208	.836	.391	2.559
LN_IKK	-.232	.817	.551	1.814
LN_IPDRB	-2.163	.034	.664	1.506
LN_PAD	4.320	.000	.248	4.027
LN_DBH	4.554	.000	.238	4.202

a. Dependent Variable: DAU

Statistical test results in Table 3 shows the value of tolerance shows no independent variables that have a value of tolerance is less than 0.10, and Variance Inflation Factor (VIF) showed smaller than 10.

Considering the correlation between the independent variables on the covariance matrix in Table 4, the correlation between the variables DBH with IJP variables of -0.371 (37.10%). IPM and IJP variables are at -0.119 (11.90%), IGDP per capita at current prices with IJP variables of -0.126 (12.60%), IKK and IJP are at -0.218 (21.80%), IJP and ILW at -0.497 (49.70%), and PAD and IJP at -0.378 (37.80%), but still far below the 95% confidence level. From the results of Collinearity Statistics and Covariance Matrix can be concluded that there is no independent multicollinearity among variables in the regression model.

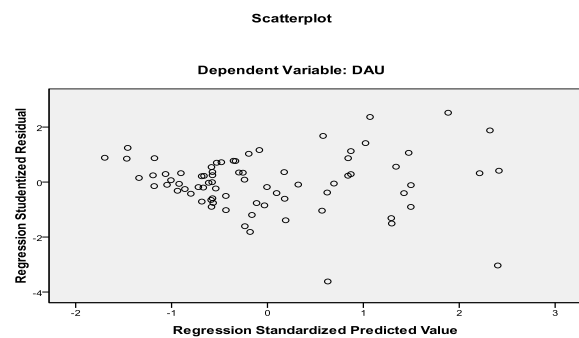
**Table 4 Covariance Matrix**

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	(Constant)	-3.121E12	4.029E11			-7.747	.000
	LN_IJP	5.196E10	1.377E10	.295		3.774	.000
	LN_ILW	1.347E10	5.064E9	.154		2.660	.010
	LN_IPM	5.809E10	2.787E11	.013		.208	.836
	LN_IKK	-2.939E10	1.265E11	-.012		-.232	.817
	LN_IPDRB	-4.002E10	1.851E10	-.103		-2.163	.034
	LN_PAD	6.131E10	1.419E10	.337		4.320	.000
	LN_DBH	8.501E10	1.867E10	.363		4.554	.000

a. Dependent Variable: DAU

**F. Heteroskedasticity Test**

Heteroskedasticity Test on this study aims to test whether the regression occurred residual inequality variance from one observation to another observation. If the difference of the residuals of the observations to other observations remains, it is called Homoskedasticity, and if different, it is called heteroscedasticity. Scatterplots graph in Figure 3 shows that the dots randomly spread and spread both above and below the number 0 on the Y axis and does not form a specific pattern of regular, indicating not happen heteroskedasticity.



**Fig. 3 Scatterplots**

**G. Autocorrelation Test**

Autocorrelation Test in this study aims to test in the regression model is no correlation between bullies error in period t with bullies error in period t-1 (previous).

Hypothesis:

- $H_0$ : There is no positive or negative



- correlation
- Ha: There are a positive correlation and negative auto

Criteria:

- Reject Ha, thank Ho if  $du < 4 - du$
- Reject Ho, thank Ha if not  $du < 4 - du$

The research model as described in Section IV-Methods, the formulation of the model in the form of double-log regression is dependent and independent variables in natural logarithm is as follows:

$$\text{LnDAU} = \beta_0 \text{LnIJP} + \beta_1 + \beta_2 + \beta_3 \text{LnIPM} \text{LnILW} \text{LnIKK} + \beta_4 \beta_5 \beta_6 \text{LnPAD} \text{LnIGDP} + e + \beta_7 \text{LnDBH}$$

After the statistical test to the regression model in the form of a double log, the obtained value of Durbin-Watson amounted to 1,683. For  $n = 75$ ,  $k = 7$ , and  $\alpha = 0.05$  the critical table value Durbin-Waston is  $dl = 1,428$ ,  $du = 1,834$  and  $four-du = 2,166$ . Means that  $dl = 1,428 < dw = 1,683 < du = 1,834$  then said he could not conclude whether there is autocorrelation. Summary of Durbin-Waston test results can be seen in the following table.

**Table 4. Durbin-Watson Statistics Test**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.953 <sup>a</sup>	.908	.899	.14248	1.683

a. Predictors: (Constant), LN\_DBH, LN\_IPM, LN\_IPDRB, LN\_IKK, LN\_ILW, LN\_PAD, LN\_IJP  
 b. Dependent Variable: LN\_DAU

In this study, regression model in the form of a double log above, the result is still not normal so as to overcome to find out there was no occurrence of autocorrelation, then all the independent variables in regression models are transformed in natural logarithm and the dependent variable in a linear form.

According to Ghozali [7][8], having performed classical assumption for the model, but one of the assumptions are not met; it can be done with the dependent and independent variables transformation into the natural logarithm, partly by changing into a semilog regression equation. Semilog is the dependent variable in the form of log and linear independent, or all independent variables in the form of log and linear dependent. According to Ghozali [7][8], it also explains, Lin-Log model is a regression model is an independent variable in the form of logarithms and the dependent variable in a linear form.

After autocorrelation test against the model as the table 5:10 Durbin-Waston values obtained for 2057 stating  $du = 1,834 < dw = 2,057 < 4-du = 2,166$ . From this statistical test results can be concluded that the autocorrelation coefficients equal to zero then accept

Ho: no positive autocorrelation. Summary of Durbin-Waston test results can be seen in the following table.

**Table 5. Durbin-Watson Statistics Test**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.948 <sup>a</sup>	.898	.888	5.55106E10	2.057

a. Predictors: (Constant), LN\_DBH, LN\_IPM, LN\_IPDRB, LN\_IKK, LN\_ILW, LN\_PAD, LN\_IJP  
 b. Dependent Variable: DAU

**IV. EVALUATION**

The implementation of regional autonomy made by the Indonesian central government has the goal of independence in the management of the household. In its application, the central government also does not wash its hands full and is still providing assistance to local governments in the form of general allocation funds that can be used by local governments in the development of their respective regions. District and City in the province of North Sumatra fact still dependent on central government for funds transfer or general allocation funds for county and city governments are the main source to finance its main operations daily. Central Government every year has sent the General Allocation Fund for the City and District governments like the City of Medan and Deli Serdang has the highest DAU annually whereas the region has a high revenue. The purpose of this transfer of funds is to reduce the fiscal gap between regional governments and ensure the achievement of minimum standards of public service throughout the area in the province of North Sumatra.

Development in the public service sector will stimulate people to be more active in working for the benefit of adequate facilities with facility availability investors will also be interested in investing in the area. By increasing the productivity of the public and investors who are in the area, it will have an impact on the increase in revenue in that region. It is especially the GDP per capita and PAD, Tax Sharing and Natural Resources thus spurring increased prosperity in the region through the promotion of economic growth, the achievement of human development achieved.

The balancing fund a grant for the autonomous regions given by the central government to underneath. General allocation funds for the Provincial, and District / Municipal formulated in Government Regulation (PP) No. 55 of 2005 regarding Revenue Sharing. More area and residents of a small natural resource potential will get large block grants. It is intended to equalize development in Indonesia. It is of course very beneficial for those areas that have a wide area is a vast land, compared with areas that most of the land area is not spacious

like the district of Sibolga, Nias, Samosir Regency. District and City In North Sumatra alone would very much agree with the DAU formula calculation due to the district and the City In North Sumatra is mostly land.

The calculation by using the index number of the population is very beneficial for regions with high population density such as in Medan and Deli Serdang compared to regions outside the area. The larger the population, the greater the required amenities. This variable is the biggest weighting in the central allocation to the regions resulted in the large allocation of the central budget to local governments on the island of Sumatra. On average discontent of the local government due to inadequate DAU and yet meet the fiscal needs. It also comes from the resource-rich regions, because the resource-rich regions of the central government consider the small allocation compared with the reception centers originating from its territory. A poor area of the natural resources is also dissatisfied because the funds received rated inadequate compared with the budget burden becomes greater with the delegation of tasks of the center including the cost of employee salaries.

The research found that the index Population, area index Region, Human Development Index, Construction Cost Index, Gross Domestic Product Index per capita at current prices, PAD, DBH Taxes and Natural Resources simultaneously significant effect on the magnitude of Funding General. Population Index, Region Index, PAD, DBH Taxes and Natural Resources have the positive impact and significant effect on some general allocation funds. Gross Domestic Product Index per capita at current prices does not affect the magnitude Allocation Fund General. However, the Human Development and Construction Cost Index does not significantly affect the amount of General Allocation Fund. Based on these findings, showing a partial portion of independent variables such as HDI and IKK not proportional to demonstrate the determination of the acceptance of the General Allocation Fund in the District/City of North Sumatra by the calculation formula DAU according to Regulation 55 of 2005.

The research is in line and consistent with the results of research conducted by Roflin [5] and Effendi [10] simultaneously. However, is partially different from the Effendi (2008) also said that the Population Size Region, Human Development Index, Construction Cost Index significantly affect the magnitude of the General Allocation Fund, whereas the GDP at Constant Prices do not significantly affect the magnitude of the General Allocation Fund.

The high value of the coefficient of determination (Adjusted R Square) of 0881. It shows that 88.80% of these factors that can influence the variable of general allocation funds such as

Population Index, Region Index, Human Development Index, Construction Cost Index, Gross Domestic Product Index per capita at current prices, PAD, DBH Tax results and Natural Resources. It is contrary to the results of the research conducted by Roflin [5].

## V. CONCLUSION

Test Results Statistics F shows that the index Population (X1), Region Index (X2), Human Development Index (X3), Construction Cost Index (X4), Gross Domestic Product Index per capita at current prices (X5), Local Revenue (X6), Tax and Natural Resources (X7) simultaneously significant effect on the magnitude of the General Allocation Fund (Y).

Partial results of this study indicate that the index Population (X1), Region Index (X2), Local Revenue (X6), Tax Sharing and Natural Resources (X7) affect on the magnitude of the General Allocation Fund (Y). Gross Regional Domestic Product Index per capita at current prices (X5) are the significantly negative effect on the magnitude of the General Allocation Fund (Y). Human Development Index (X3) and the Construction Cost Index (X4) did not significantly affect the amount of General Allocation Fund (Y). It shows that independent variables such as HDI and IKK not proportional in determining the amount of the General Allocation Fund reception in Regency/City Government by the calculation formula DAU according to Regulation 55 of 2005. However, it has the greatest influence in the determination of the amount of revenue is the revenue of the General Allocation Fund PAD, Tax, and Natural Resources.

## VI. FUTURE SCOPE

Regency / City Government is expected to determine the amount of General Allocation Fund policies are effective and efficient in the District / City in North Sumatra as well as the need for resignation in Regency / City Government based on HDI indicators such as education, health, and decent living standards.

The next researchers can then include district/city Outside North Sumatra Province of population data. It can be analyzed using cluster on the same variable and compared them with the different test (X2). It can be seen how much difference the influence of these variables in influencing acceptance of general allocation funds in each province.

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